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June 1966

by

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APPENDIX A

AEROTHERMAL COMPARISONS

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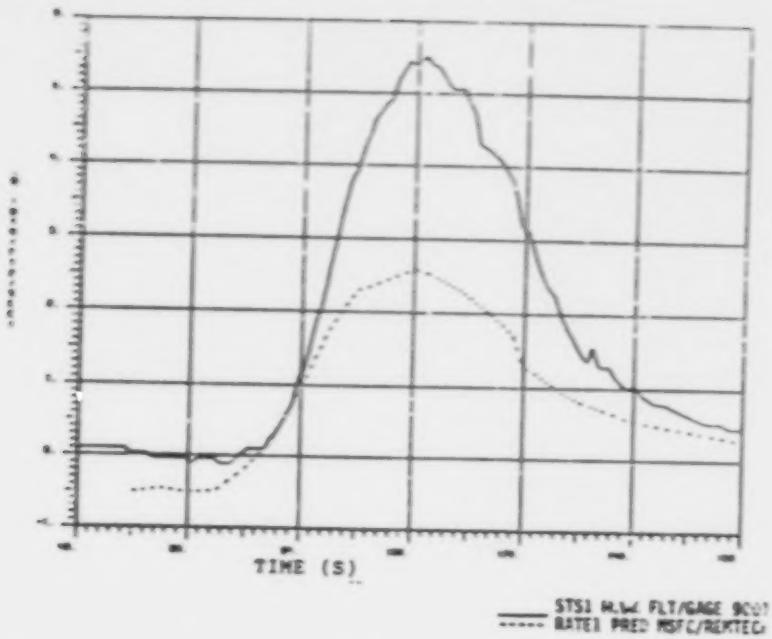
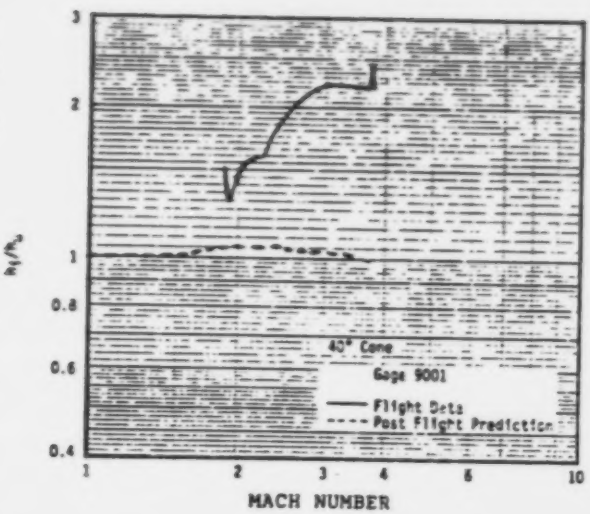
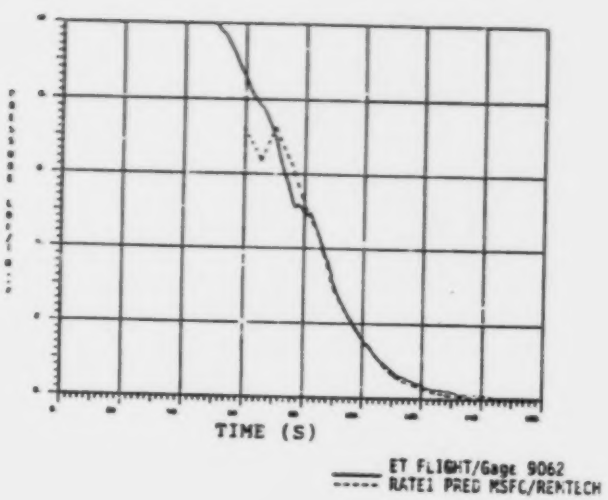
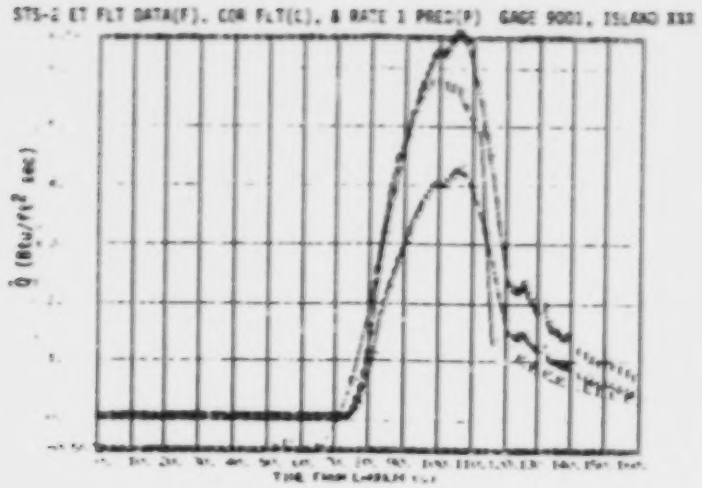


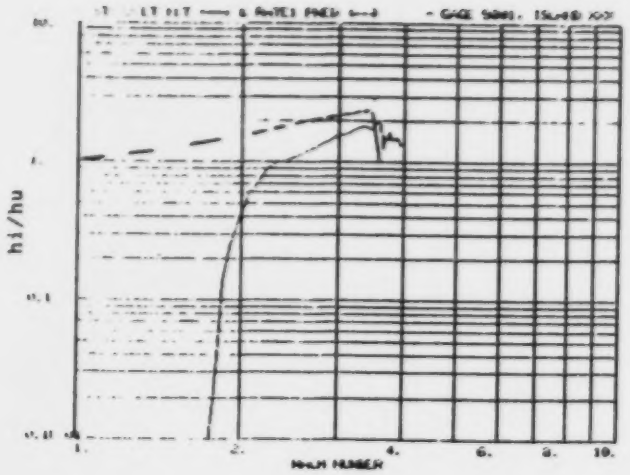


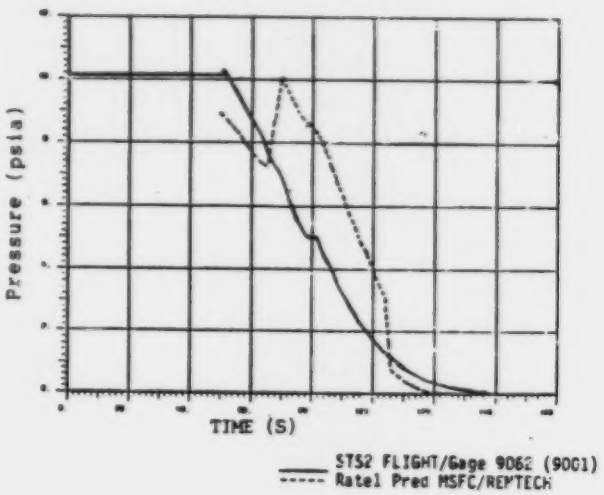


NOTE:
- Thermal Mismatch was Considered

Fig. A.1a Aerothermal Analysis for Gage 9001 in STS-1







NOTE:

- **Thermal Mismatch was Considered**

Fig. A.1b Aerothermal Analysis for Gage 9001 in STS-2

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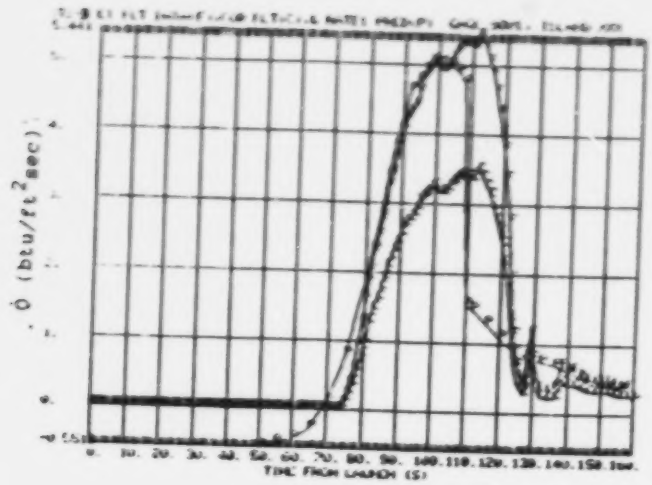

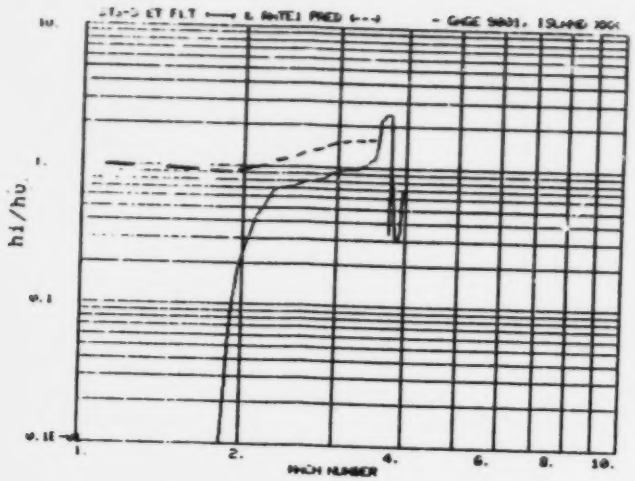

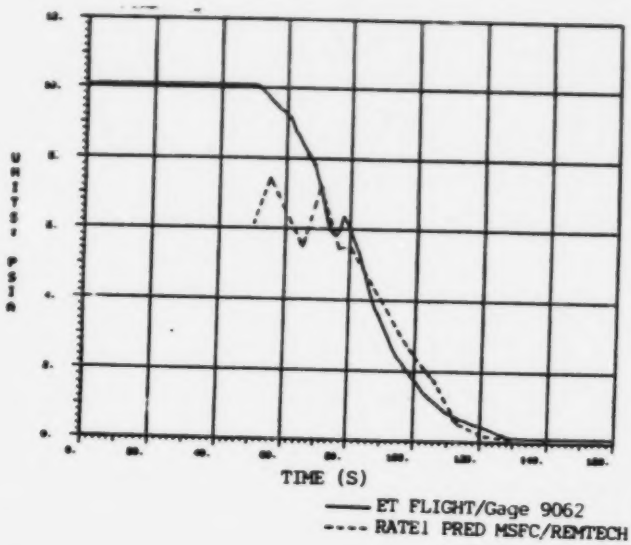

NOTE:
- Thermal Mismatch was Considered

Fig. A.1c Aerothermal Analysis for Gage 9001 in STS-3

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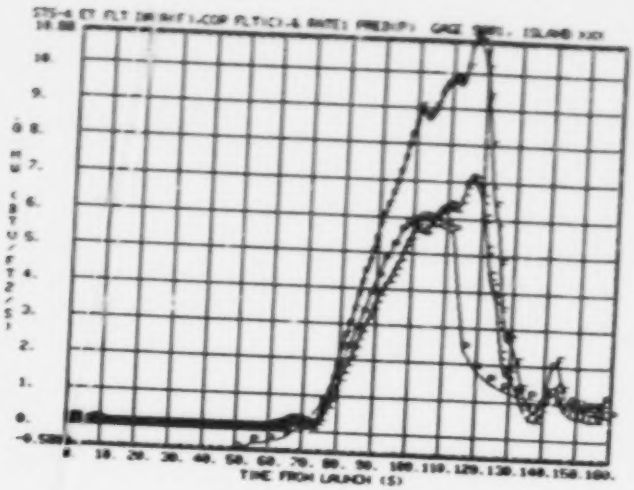

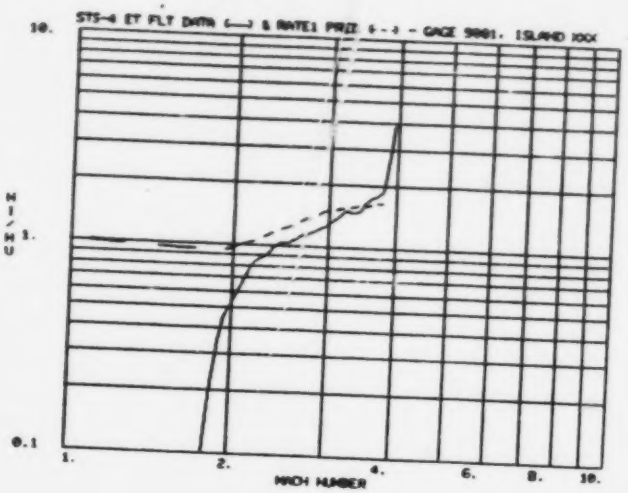

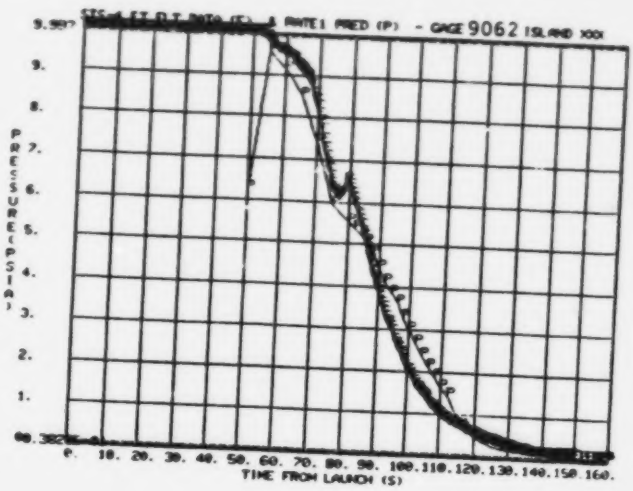

NOTE:
- Thermal Mismatch was Considered

Fig. A.1d Aerothermal Analysis for Gage 9001 in STS-4

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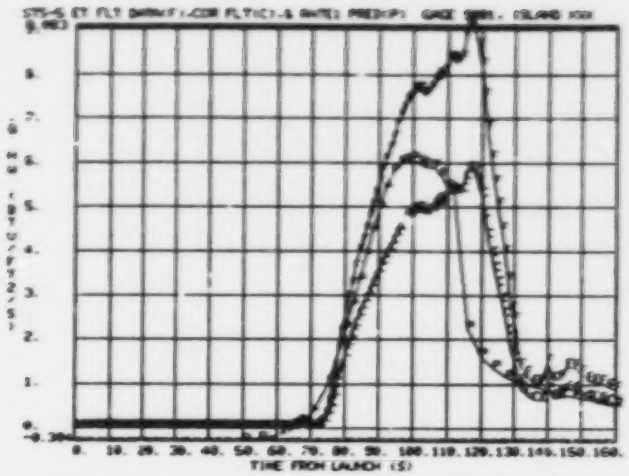

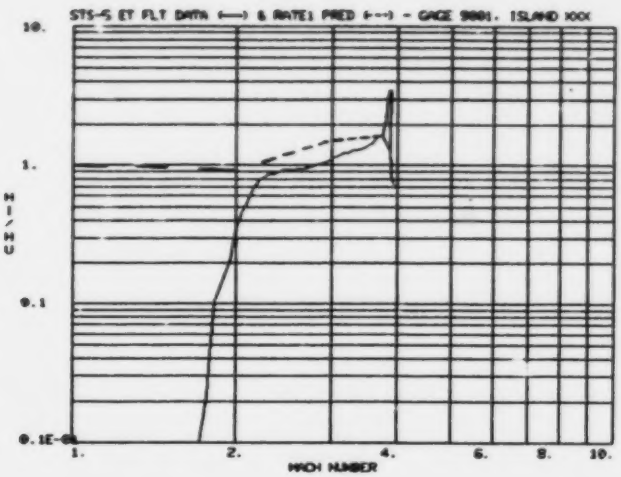

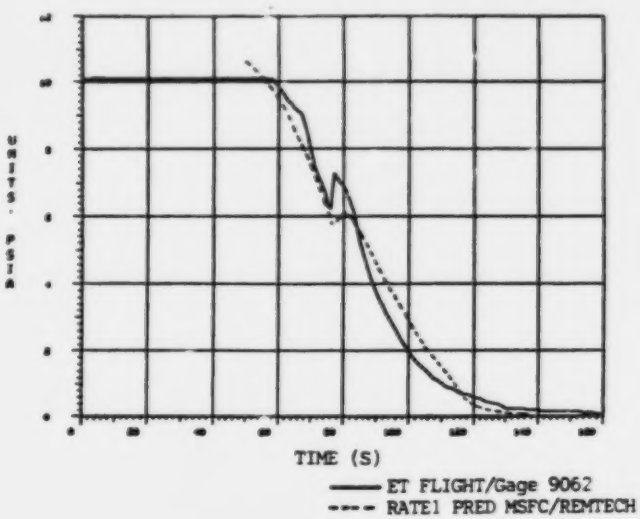

NOTE:
- Thermal Mismatch was Considered

Fig. A.1e Aerothermal Analysis for Gage 9001 in STS-5

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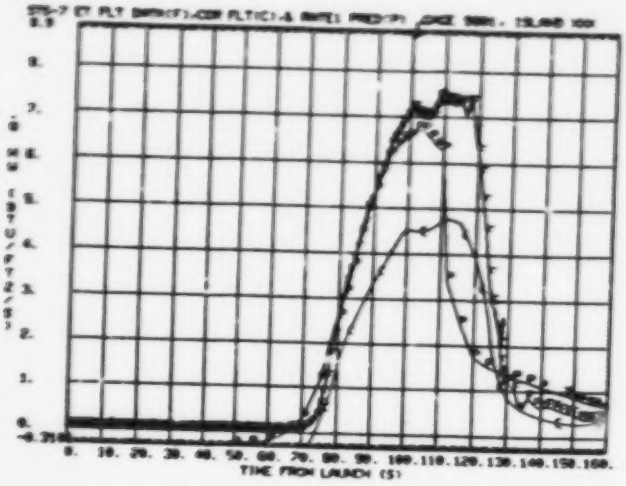

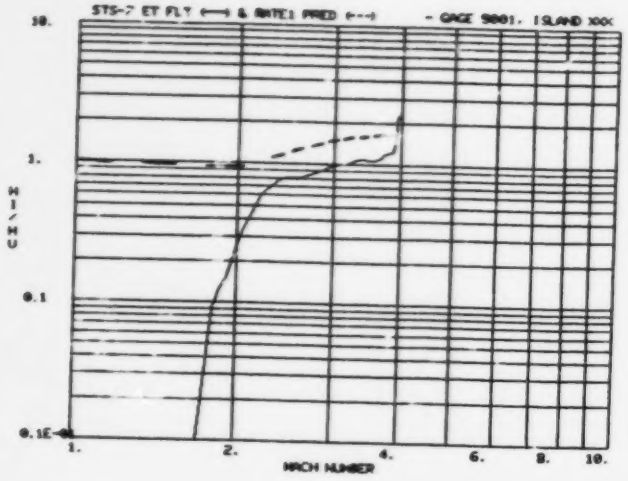

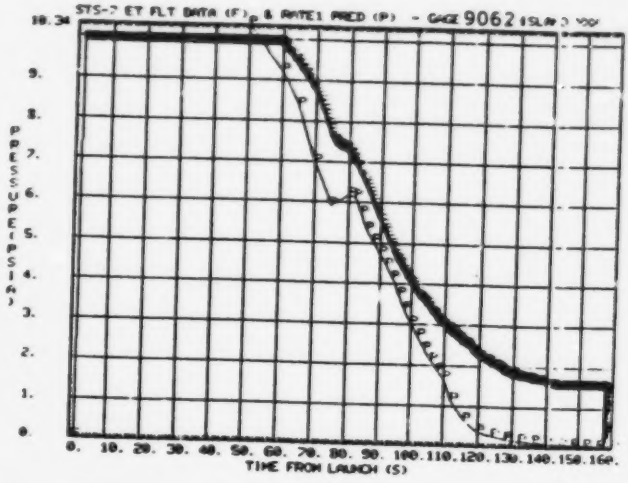

NOTE:
- Thermal Mismatch was Considered
- Bad Pressure Measurements

Fig. A.1f Aerothermal Analysis for Gage 9001 in STS-7

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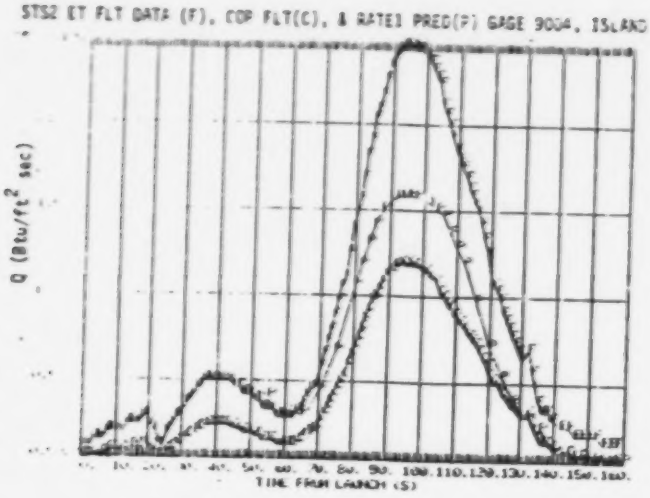

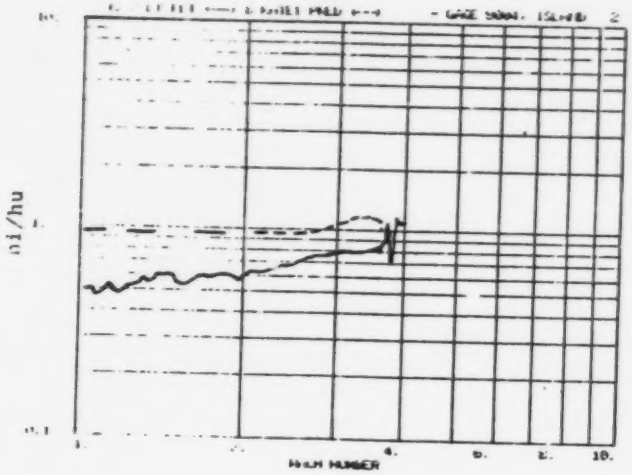

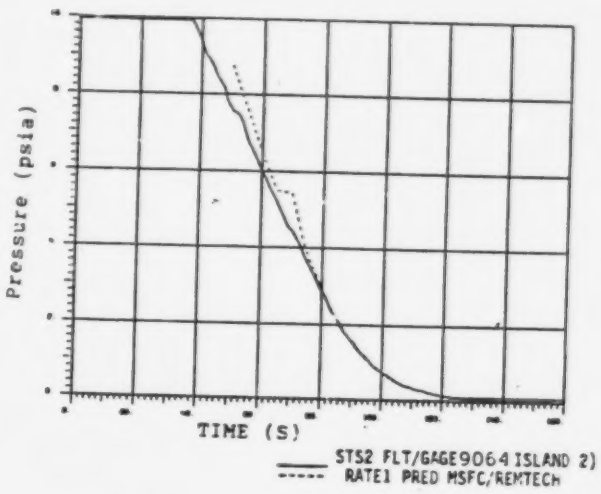

NOTE:
- Thermal Mismatch was Considered

Fig. A.2a Aerothermal Analysis for Gage 9004 in STS-2

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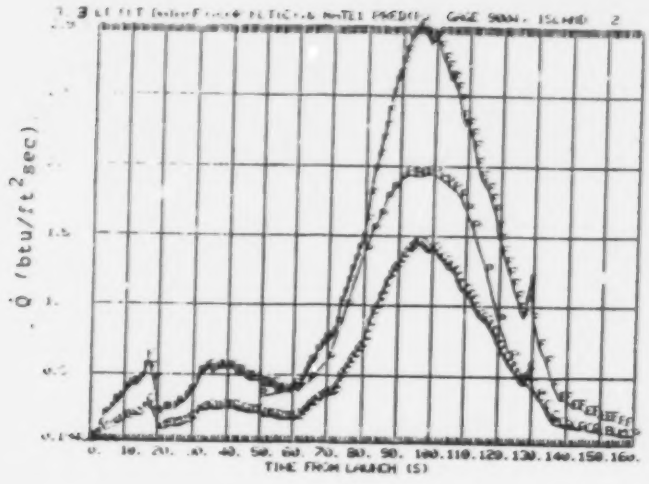

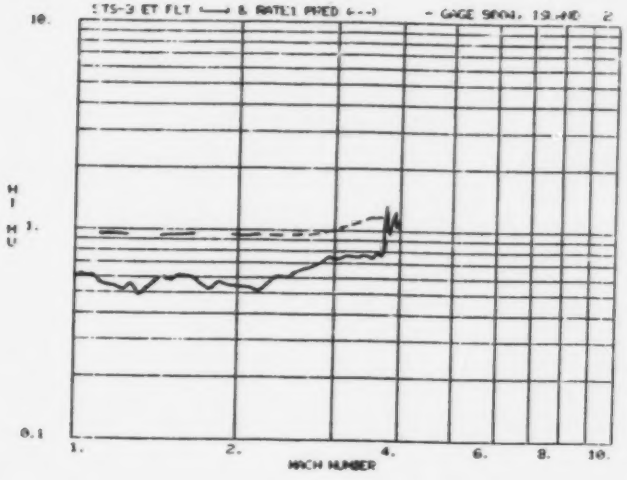

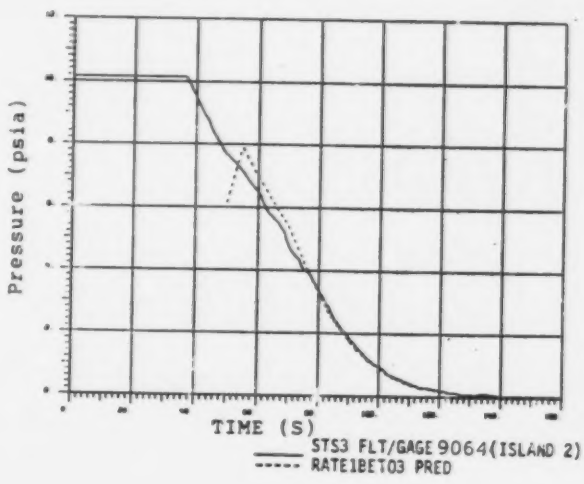

NOTE:
- Thermal Mismatch was Considered

Fig. A.2b Aerothermal Analysis for Gage 9004 in STS-3

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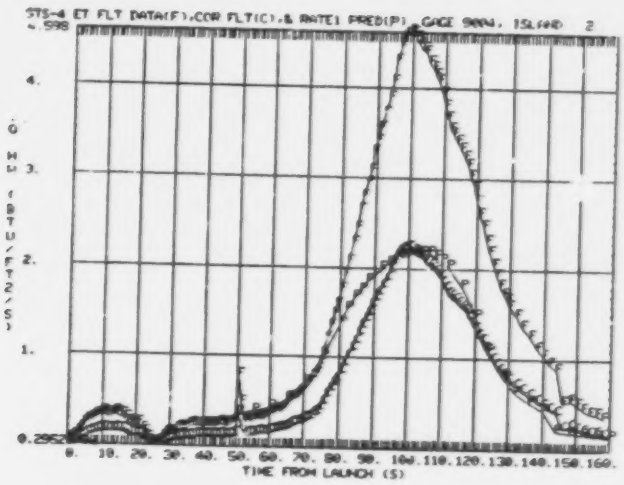

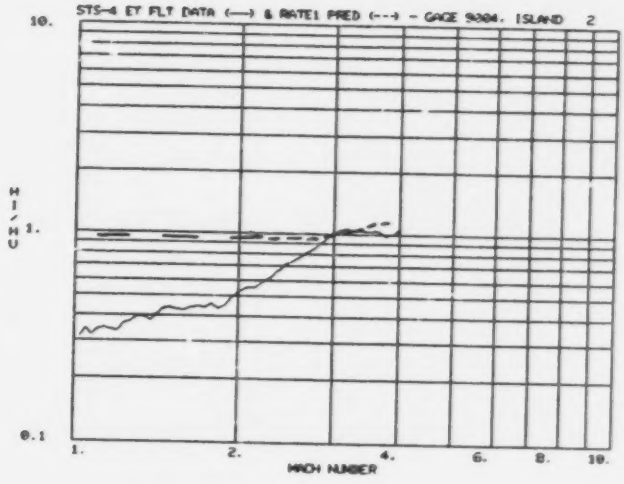

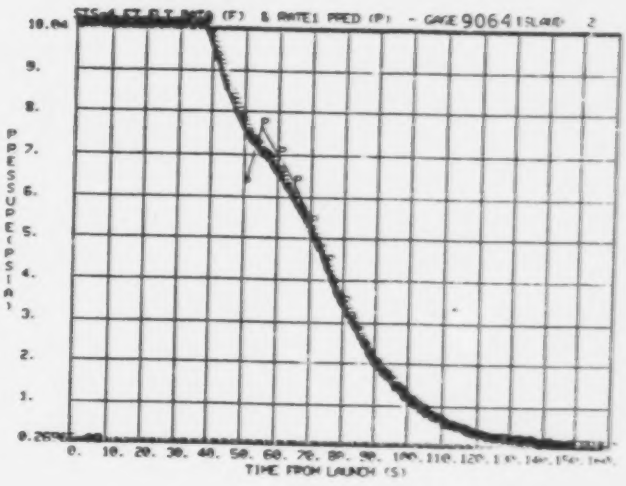

NOTE:
- Thermal Mismatch was Considered

Fig. A.2c Aerothermal Analysis for Gage 9004 in STS-4

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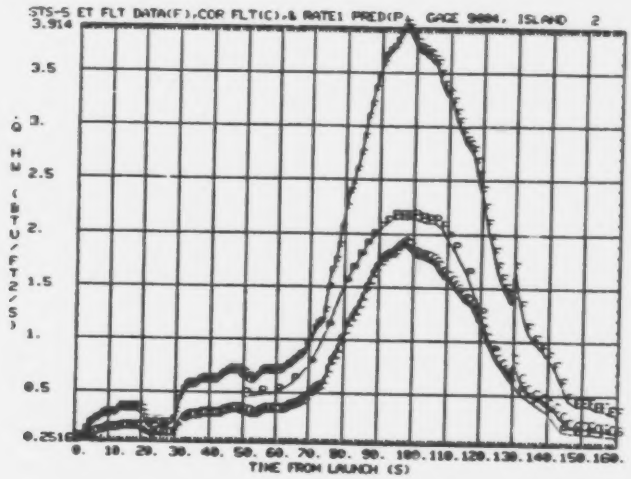

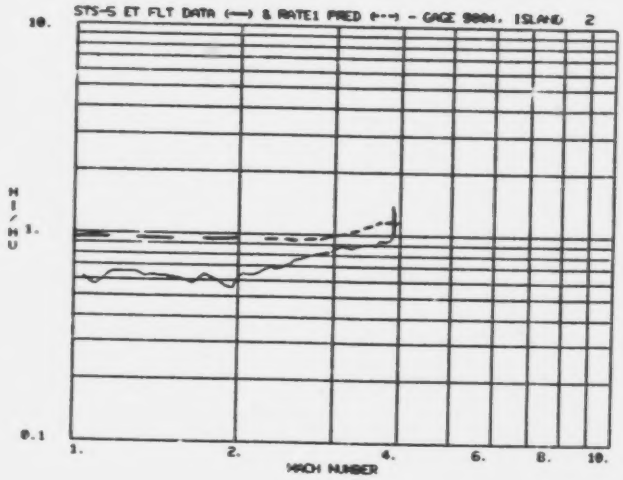

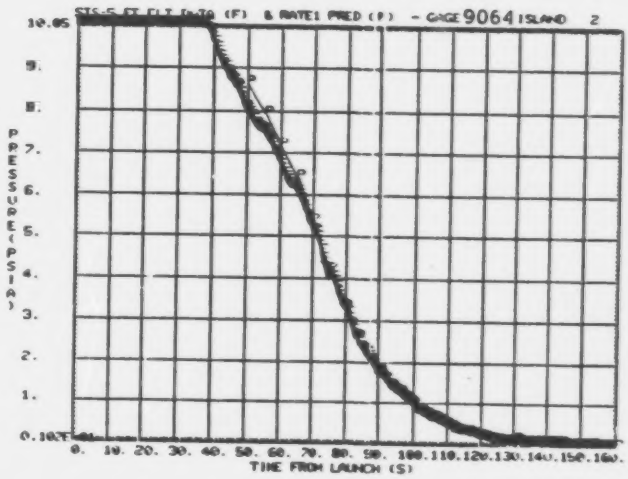

NOTE:
- Thermal Mismatch was Considered

Fig. A.2d Aerothermal Analysis for Gage 9004 in STS-5

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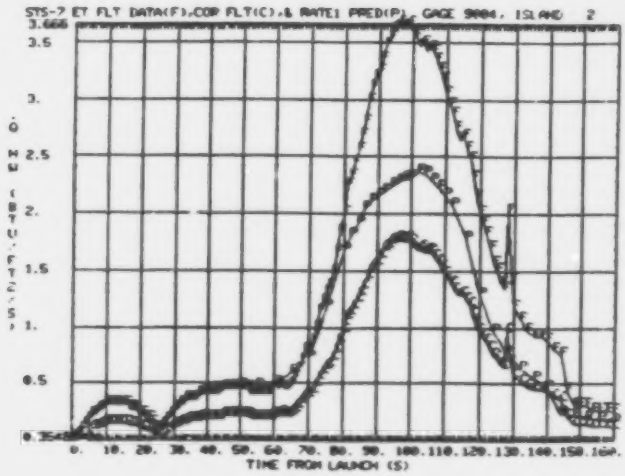

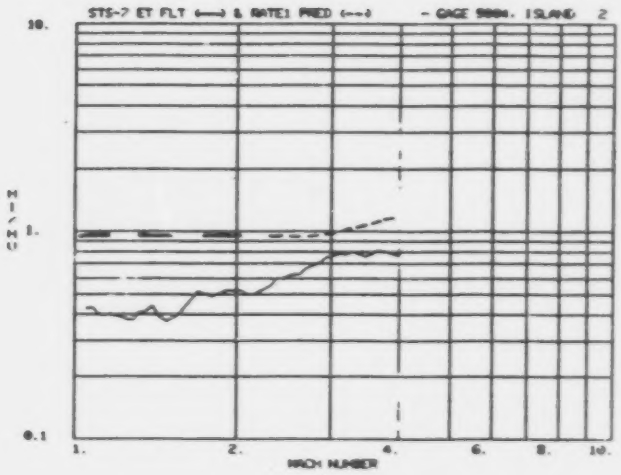

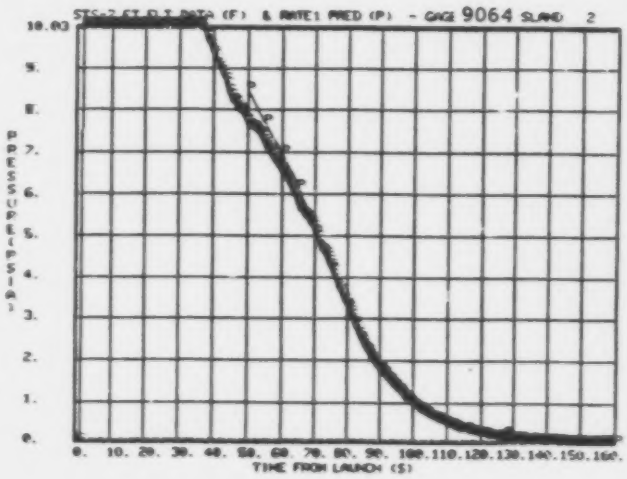

NOTE:
- Thermal Mismatch was Considered

Fig. A.2e Aerothermal Analysis for Gage 9007 in STS-7

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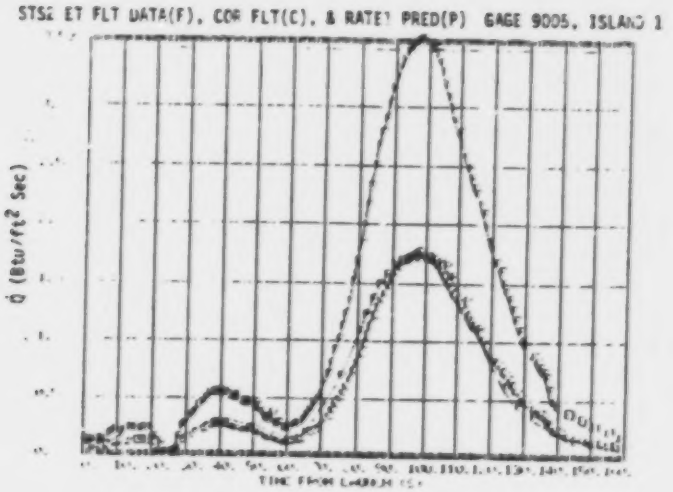

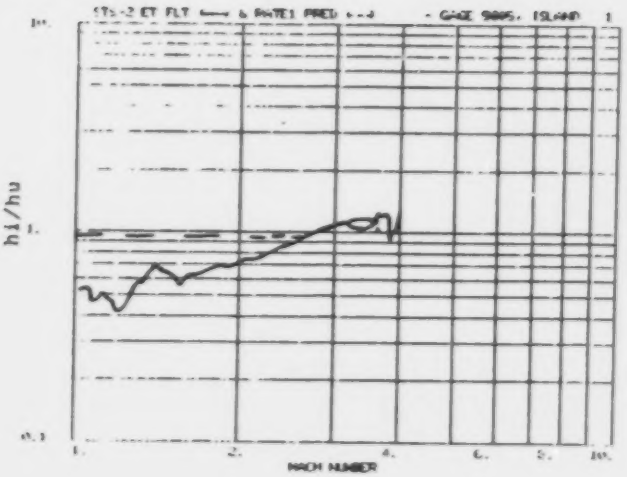

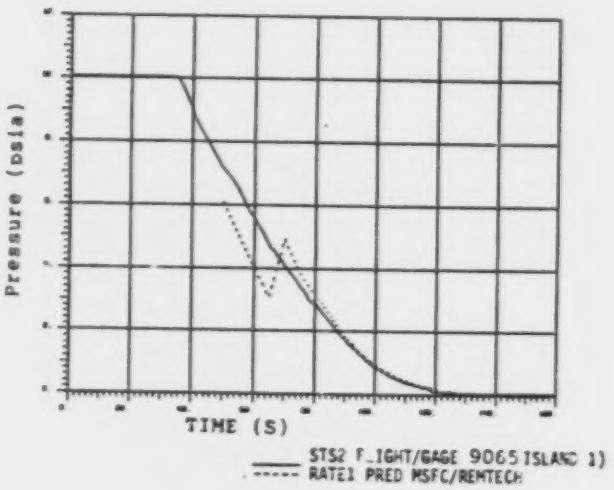

NOTE:
- Thermal Mismatch was Considered

Fig. A.3a Aerothermal Analysis for Gage 9005 in STS-2

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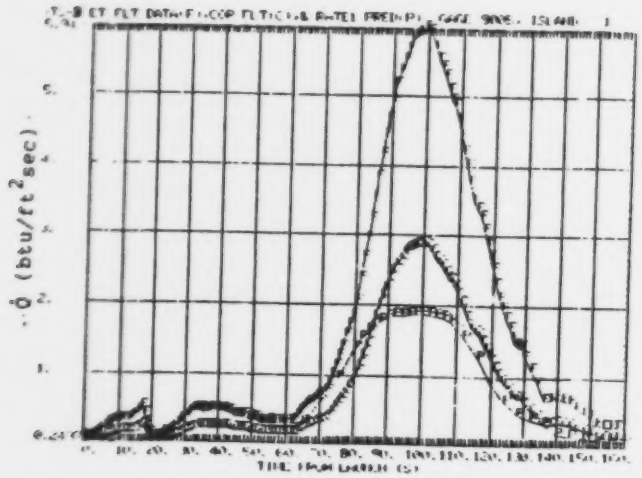
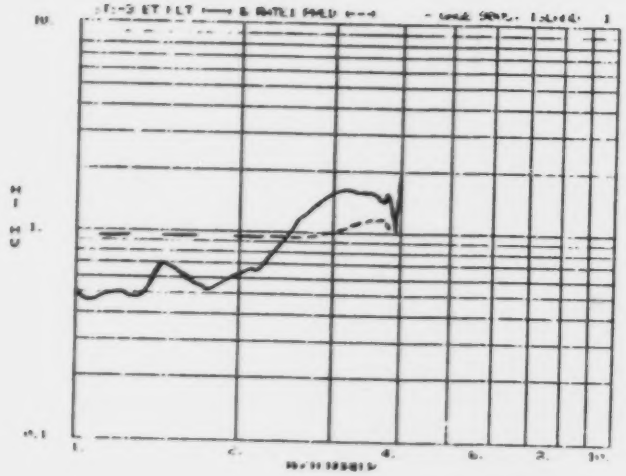
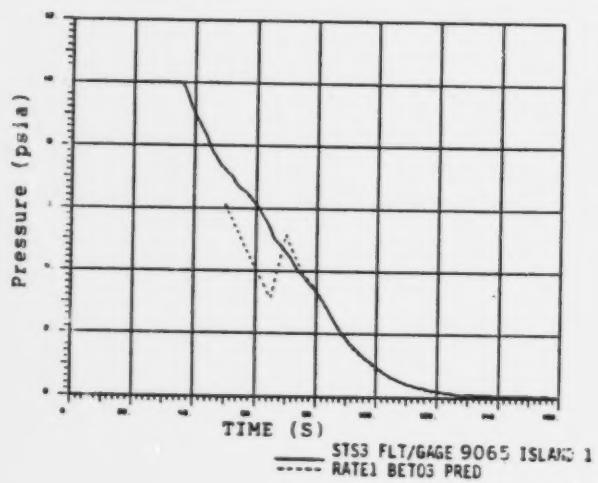
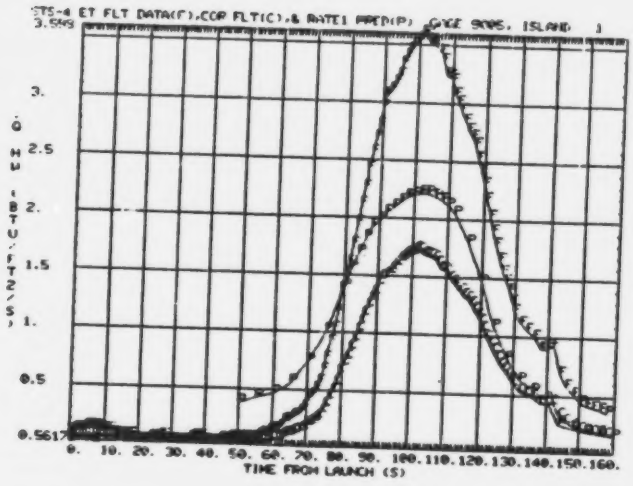


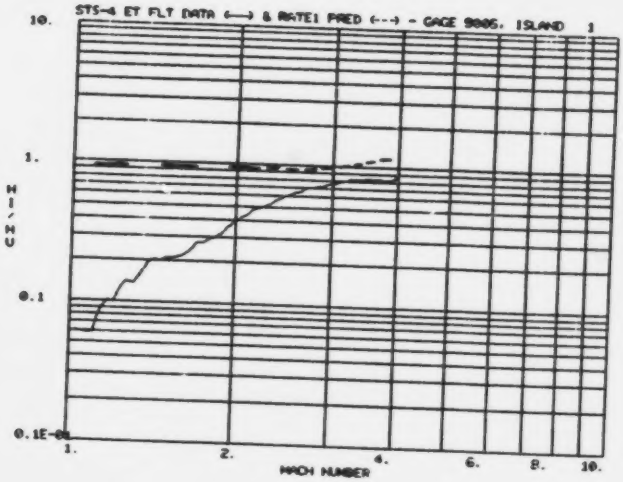


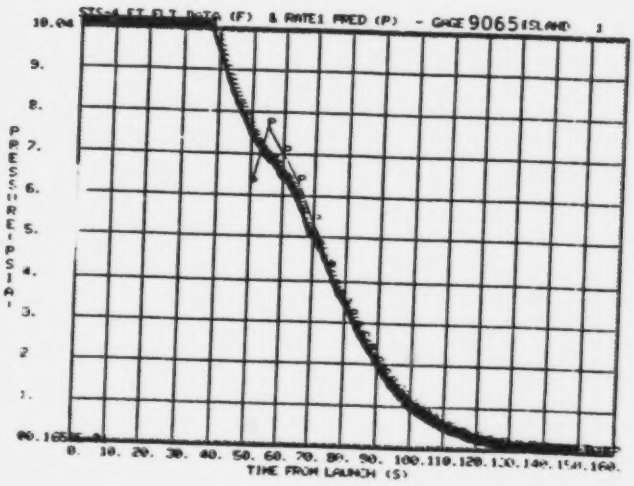


NOTE:
- Thermal Mismatch was Considered

Fig. A.3b Aerothermal Analysis for Gage 9005 in STS-3







NOTE:

- **Thermal Mismatch was Considered**

Fig. A.3c Aerothermal Analysis for Gage 9005 in STS-4

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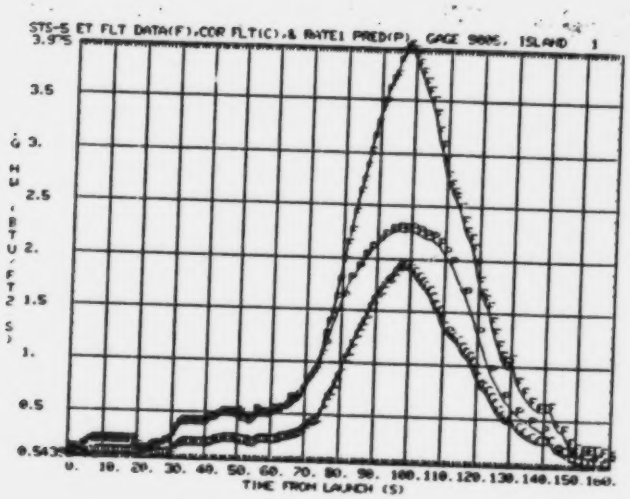

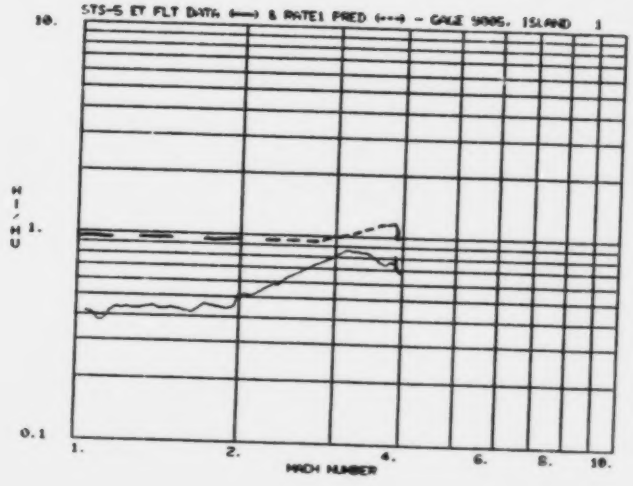

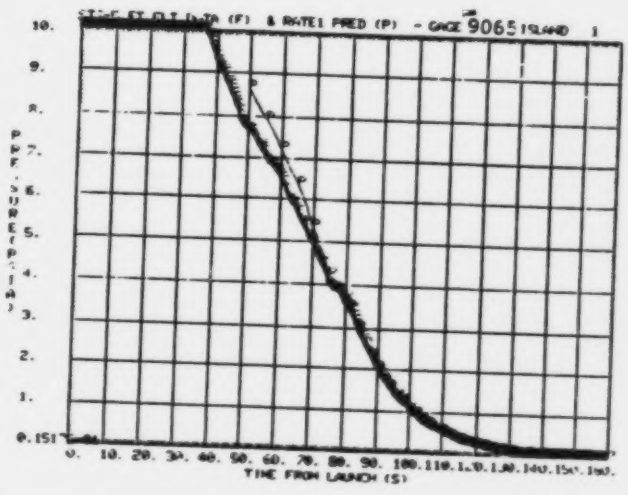

NOTE:
- Thermal Mismatch was Considered

Fig. A.3d Aerothermal Analysis for Gage 9005 in STS-5

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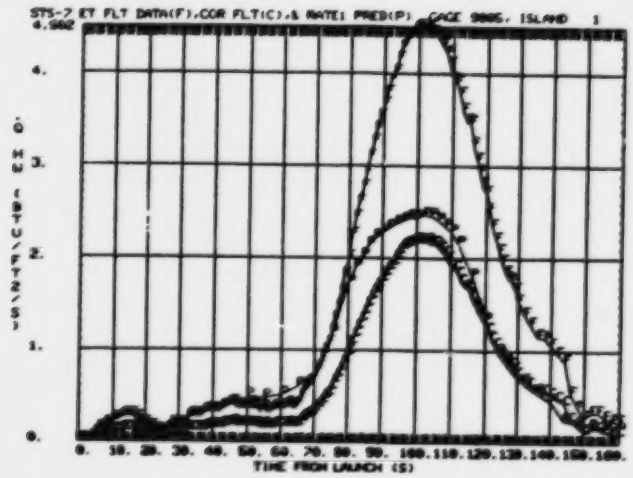

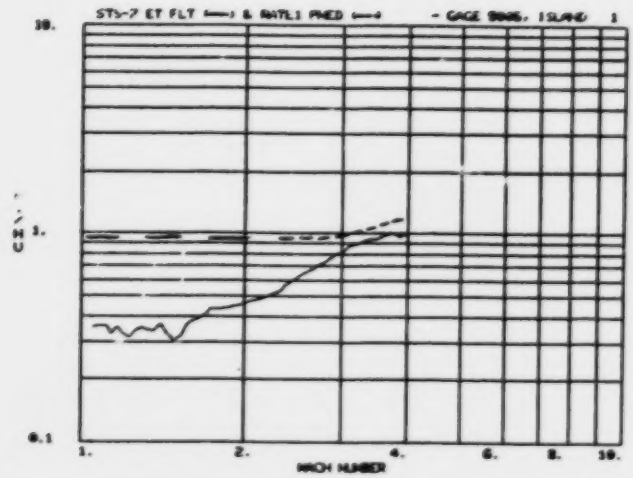

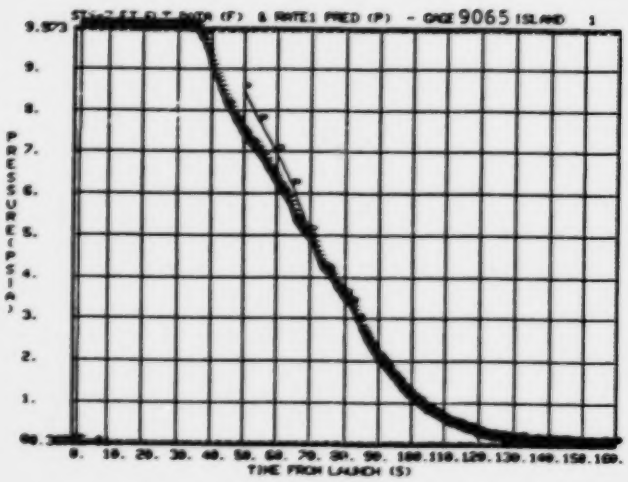

NOTE:
- Thermal Mismatch was Considered

Fig. A.3e Aerothermal Analysis for Gage 9005 in STS-7

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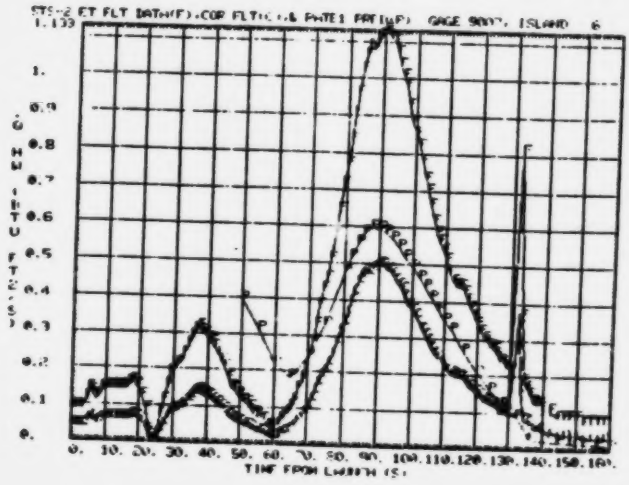

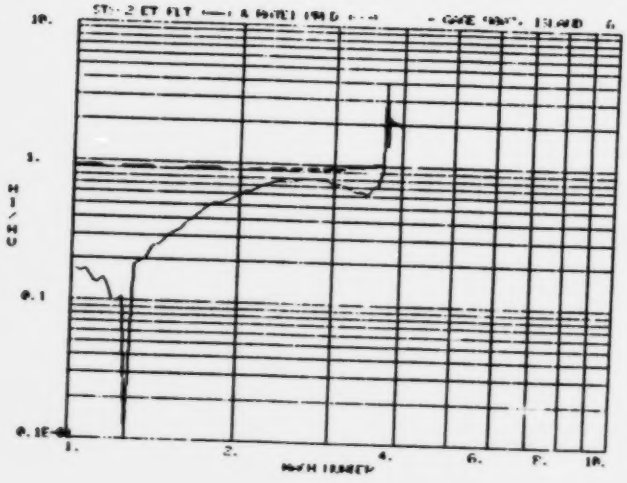

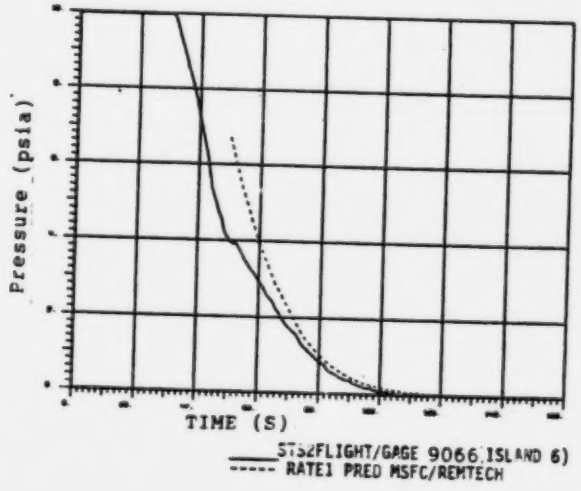

NOTE:
- Thermal Mismatch was Considered

Fig. A.4a Aerothermal Analysis for Gage 9007 in STS-2

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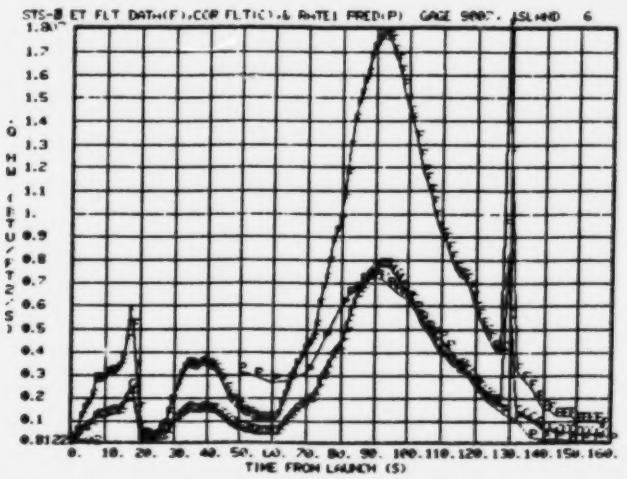

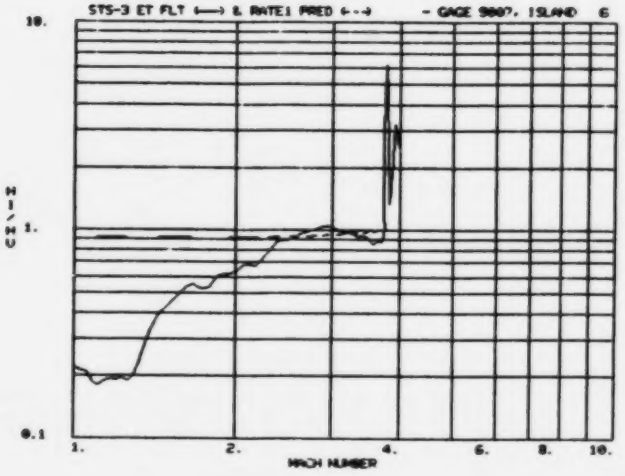

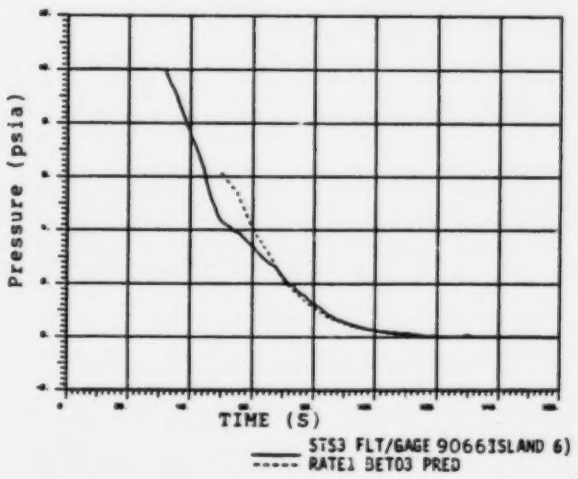

NOTE:
- Thermal Mismatch was Considered

Fig. A.4b Aerothermal Analysis for Gage 9007 in STS-3

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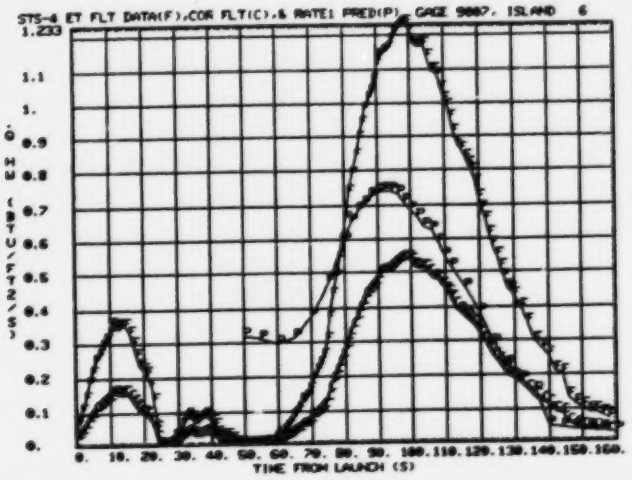

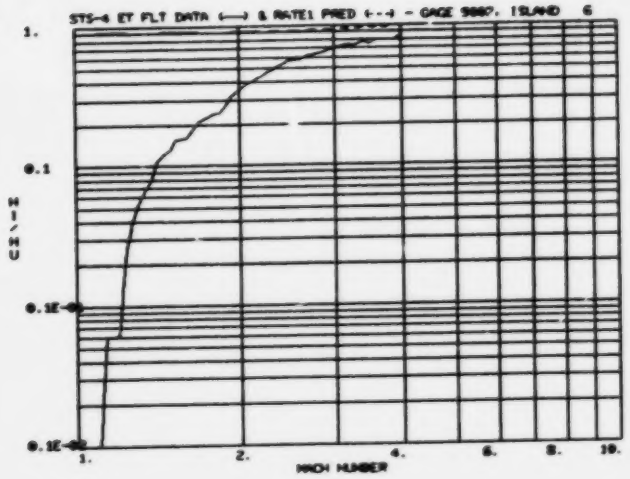

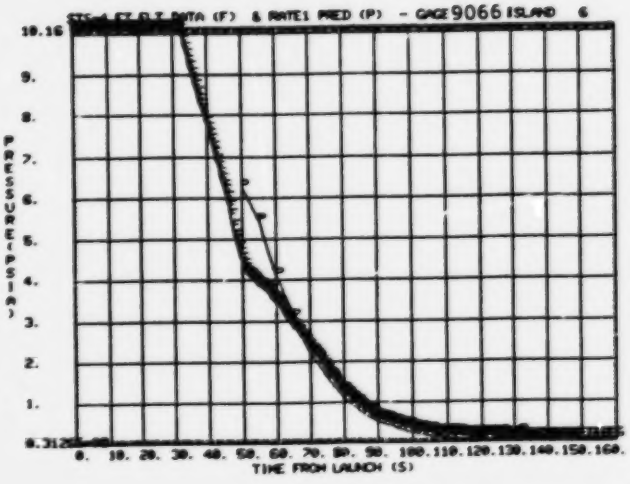

NOTE:
- Thermal Mismatch was Considered

Fig. A.4c Aerothermal Analysis for Gage 9007 in STS-4

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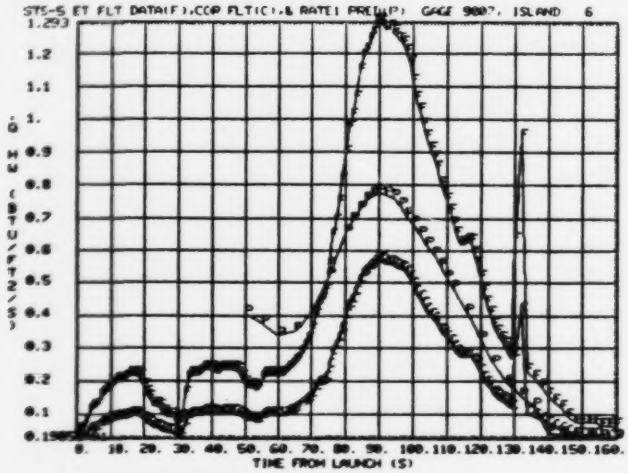

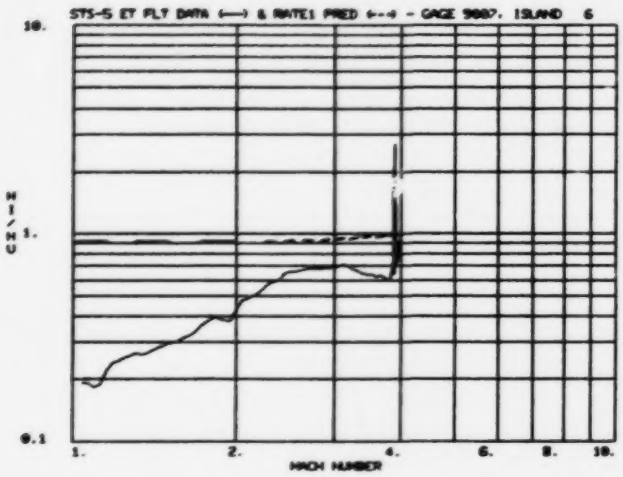

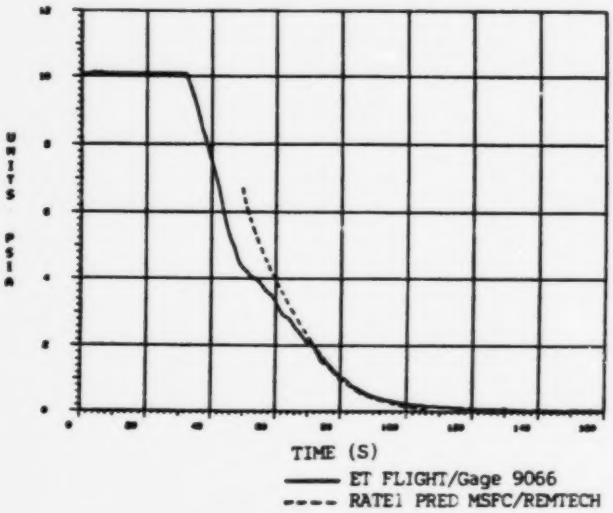

NOTE:
- Thermal Mismatch was Considered

Fig. A.4d Aerothermal Analysis for Gage 9007 in STS-5

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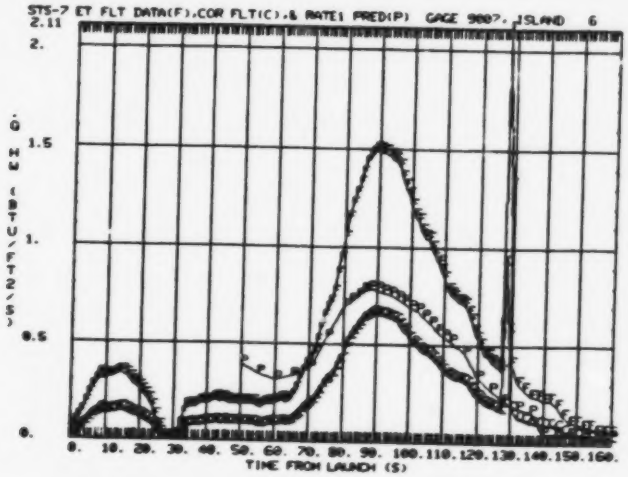

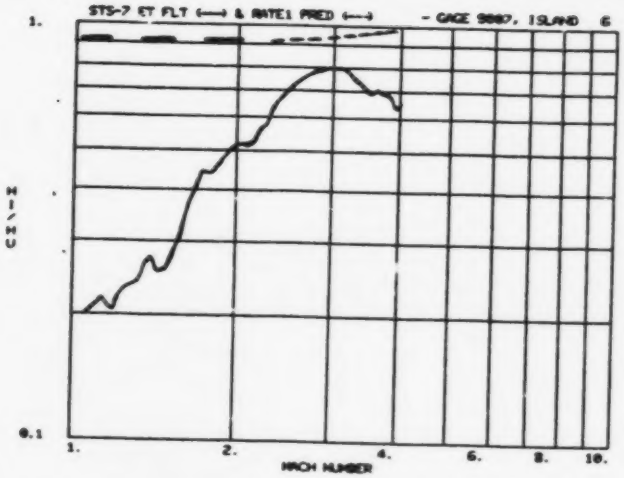

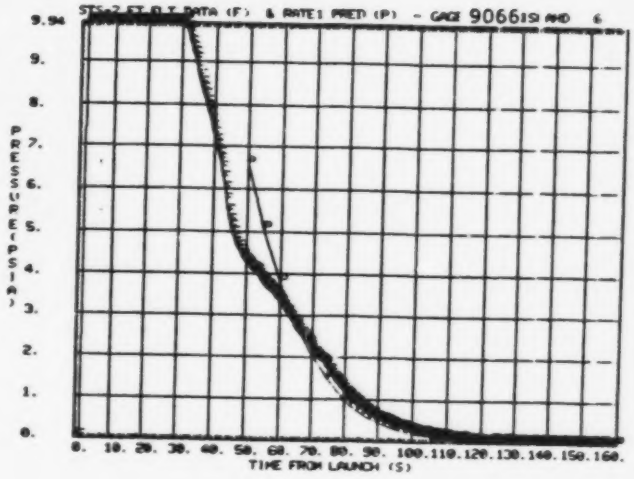

NOTE:
- Thermal Mismatch was Considered

Fig. A.4e Aerothermal Analysis for Gage 9007 in STS-7

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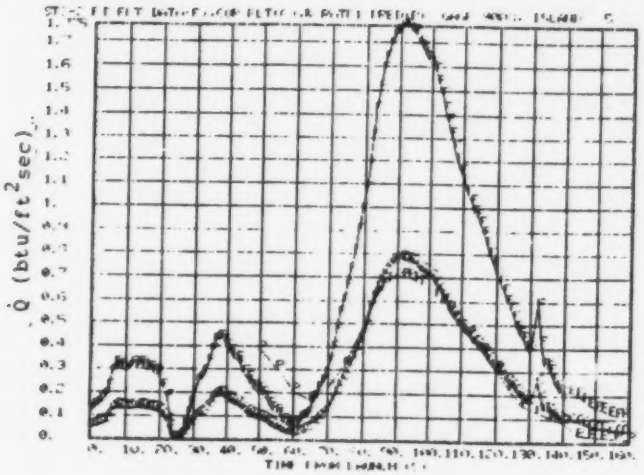

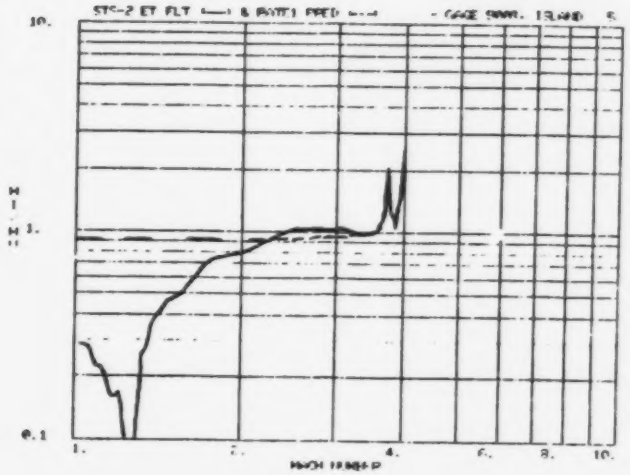

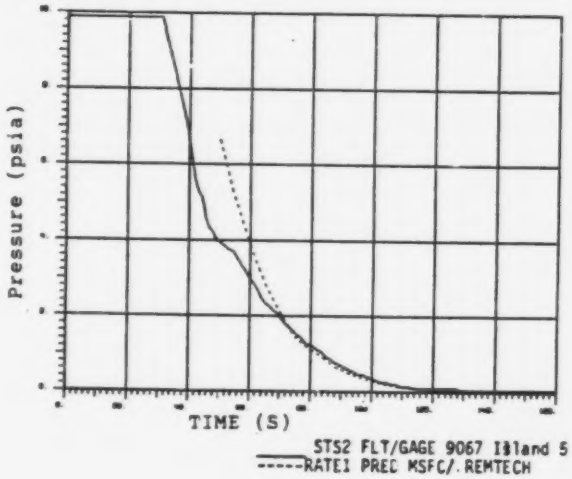

NOTE:
- Thermal Mismatch was Considered

Fig. A.5a Aerothermal Analysis for Gage 9008 in STS-2

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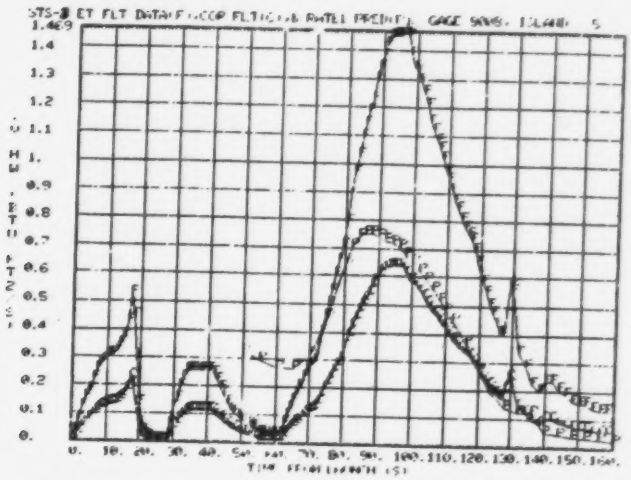

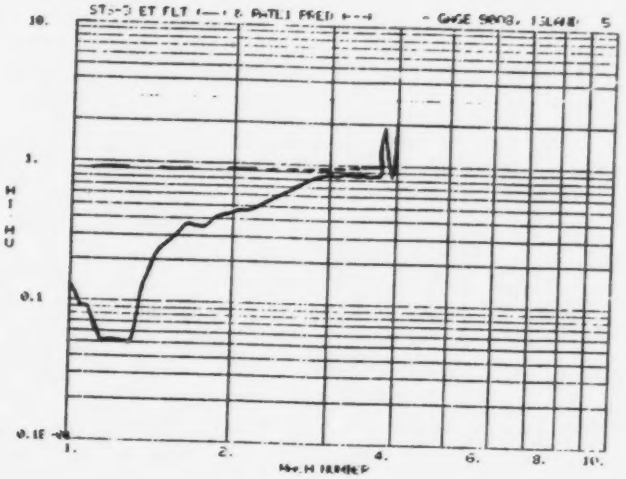

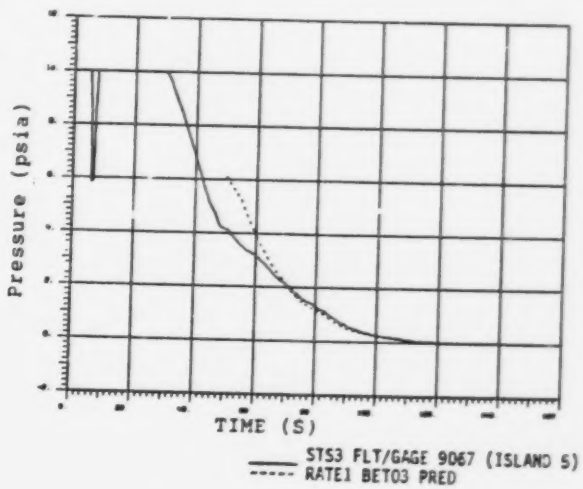

NOTE:
- Thermal Mismatch was Considered

Fig A.5b Aerothermal Analysis for Gage 9008 in STS-3

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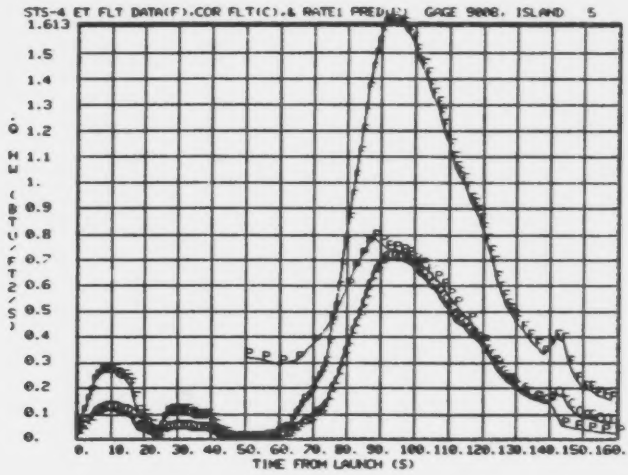

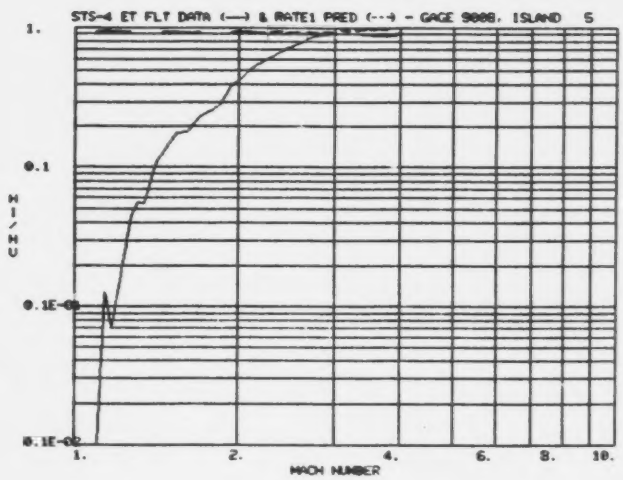

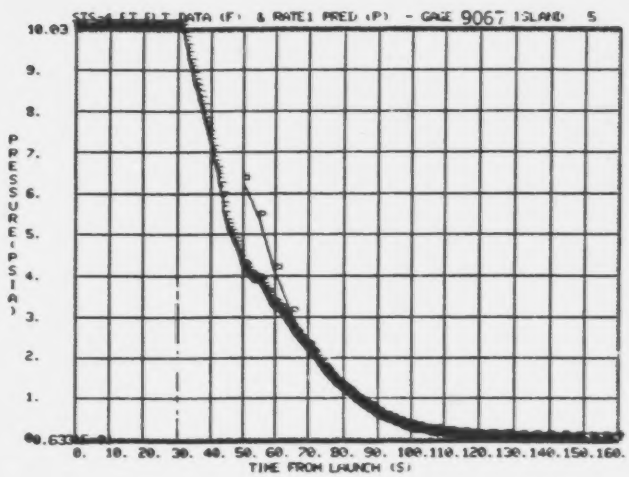

NOTE:
- Thermal Mismatch was Considered

Fig. A.5c Aerothermal Analysis for Gage 9008 in STS-4

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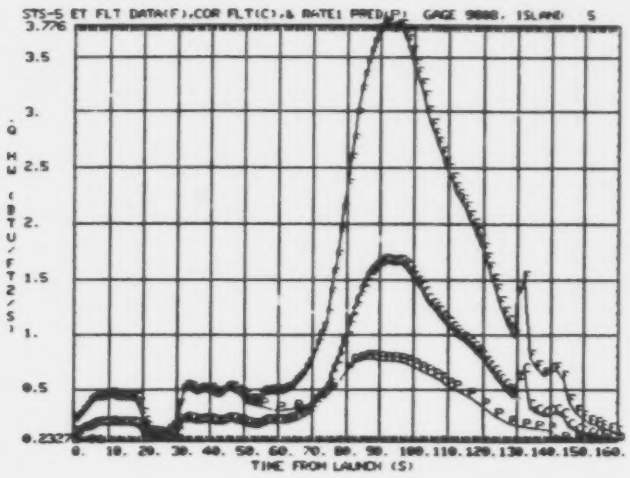

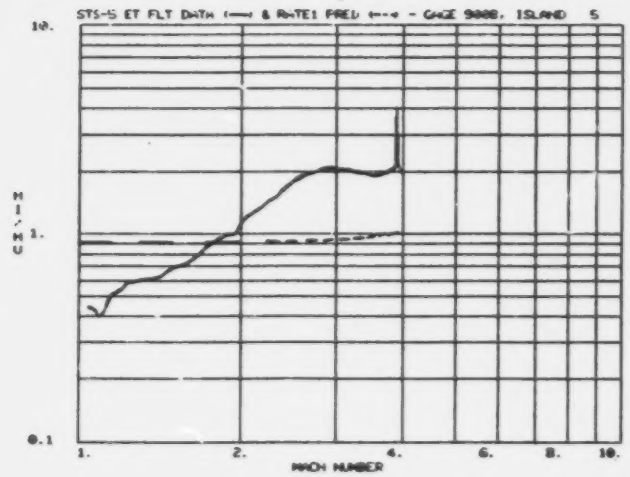

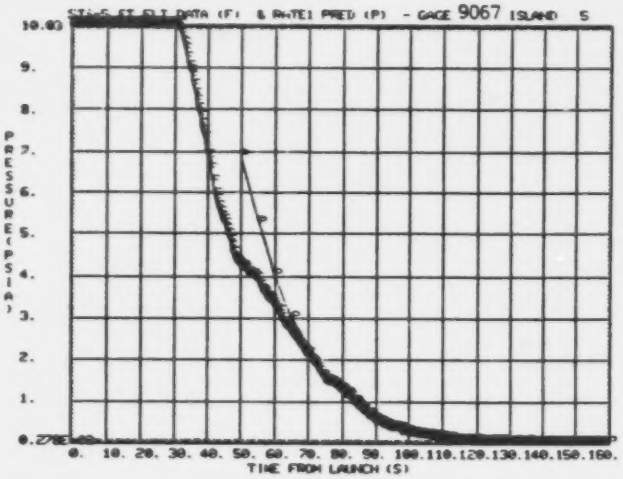

NOTE:
- Thermal Mismatch was Considered

Fig. A.5d Aerothermal Analysis for Gage 9008 in STS-5

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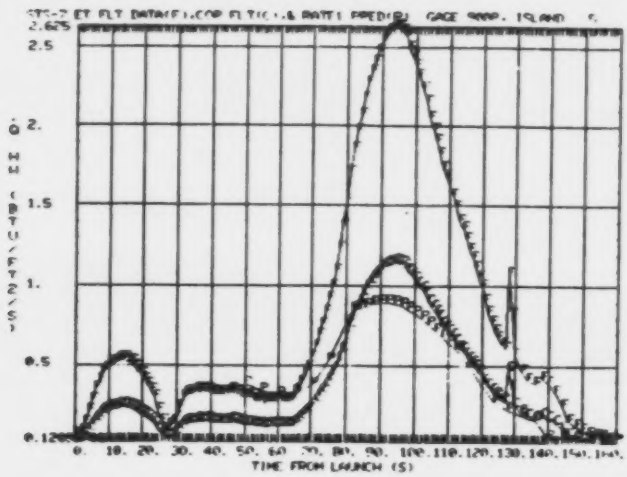

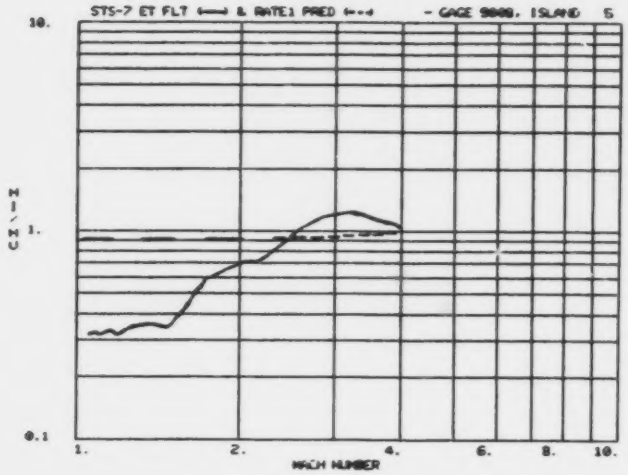

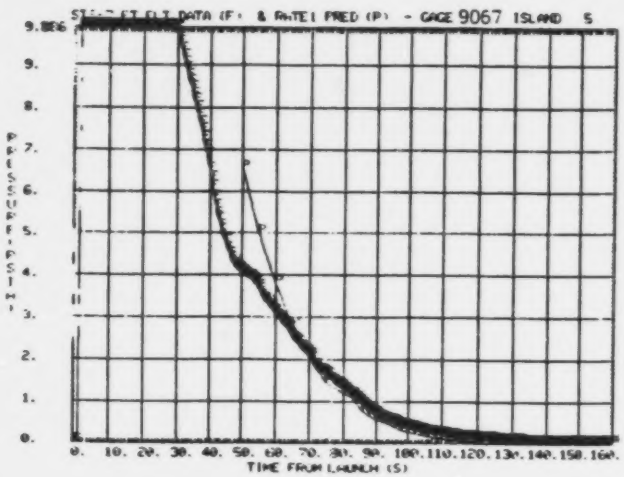

NOTE:
- Thermal Mismatch was Considered

Fig. A.5e Aerothermal Analysis for Gage 9008 ⟷ STS-7

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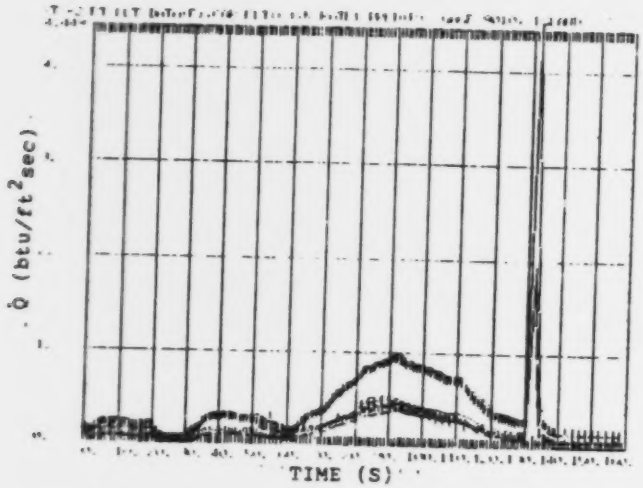

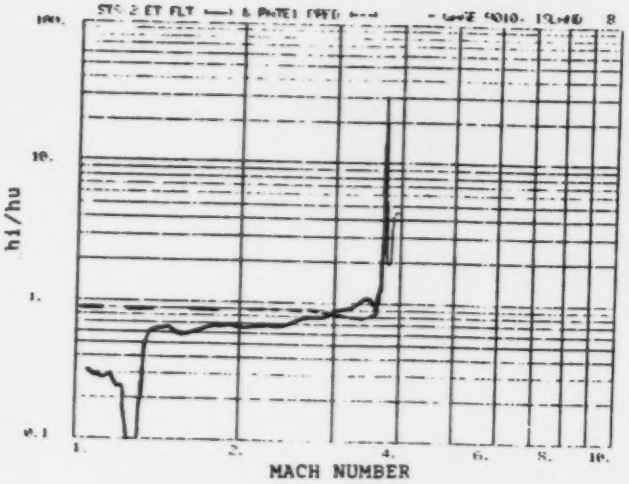

NOTE:
- Thermal Mismatch was Considered

Fig. A.6a Aerothermal Analysis for Gage 9010 in STS-2

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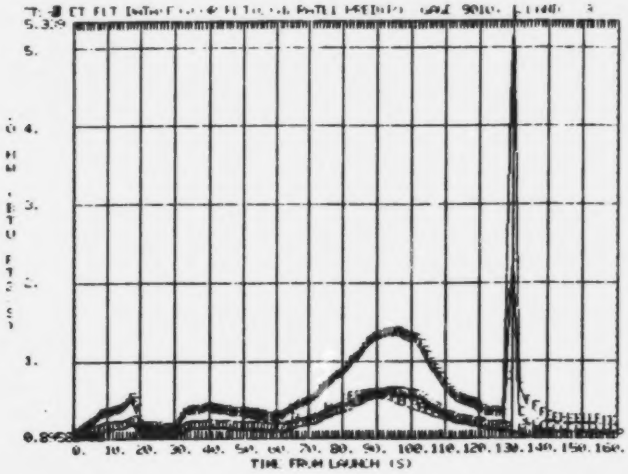

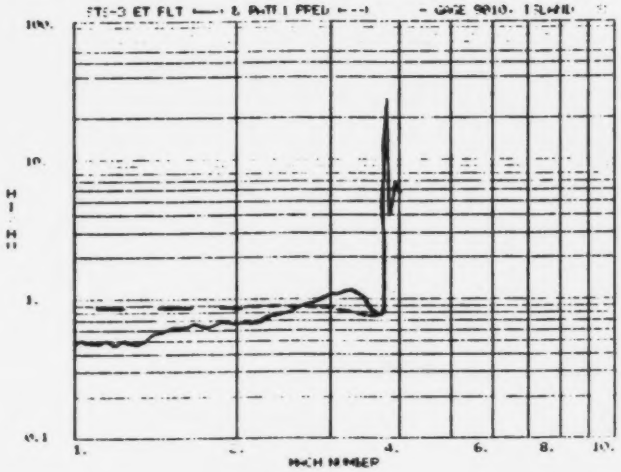

NOTE:
- Thermal Mismatch was Considered

Fig. A.6b Aerothermal Analysis for Gage 9010 in STS-3

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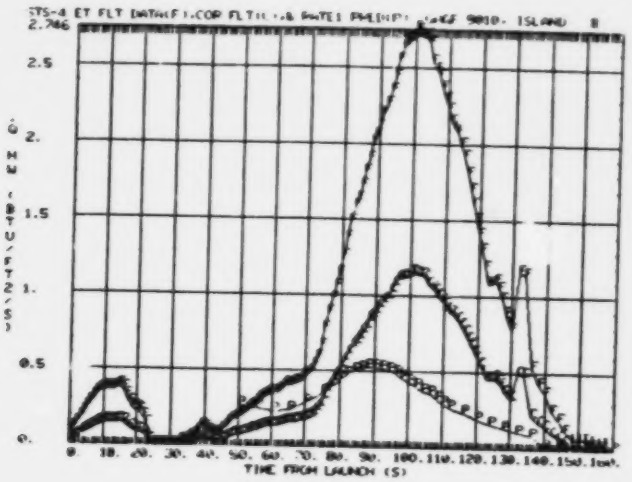

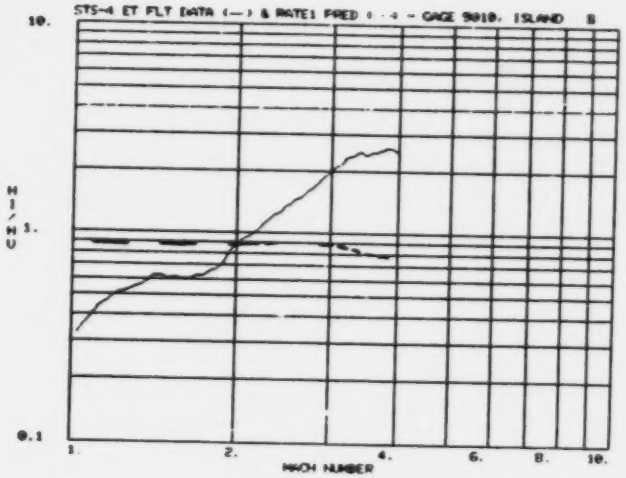

NOTE:
- Thermal Mismatch was Considered

Fig. A.6c Aerothermal Analysis for Gage 9010 in STS-4

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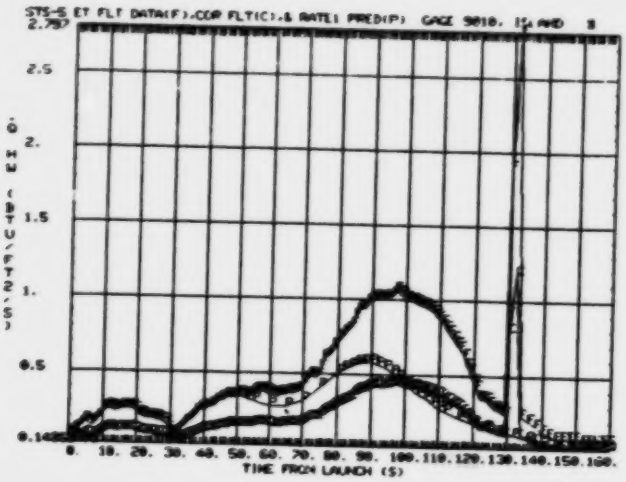

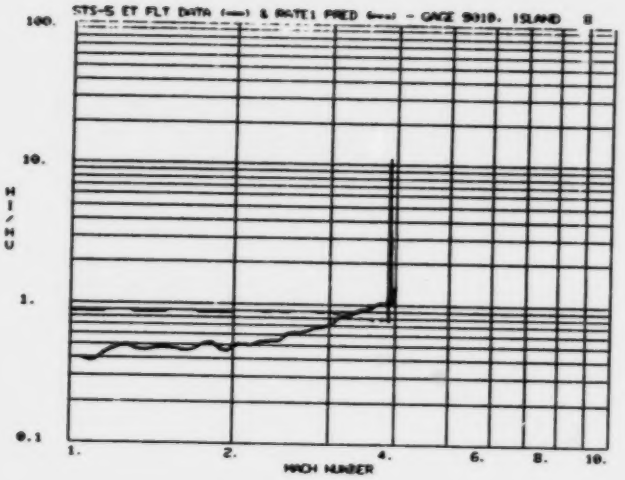

NOTE:
- Thermal Mismatch was Considered

Fig. A.6d Aerothermal Analysis for Gage 9010 in STS-5

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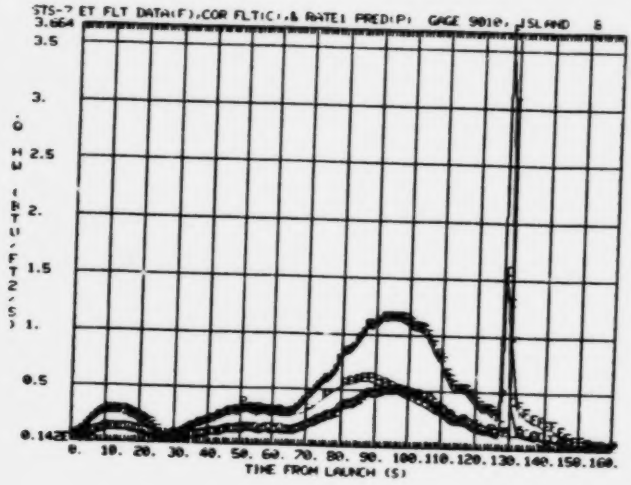

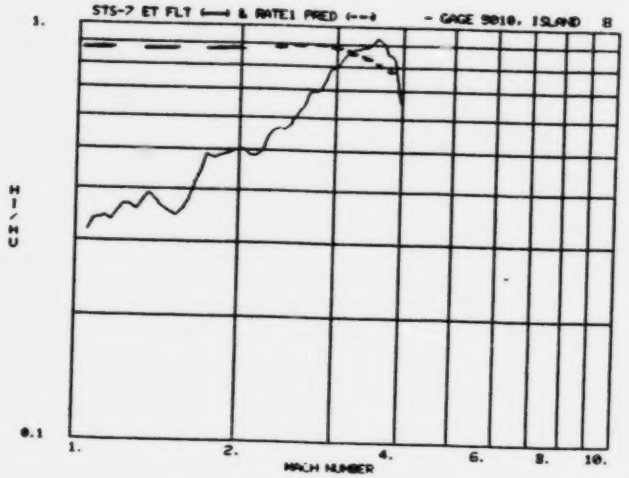

NOTE:
- Thermal Mismatch was Considered

Fig. A.6e Aerothermal Analysis for Gage 9010 in STS-7

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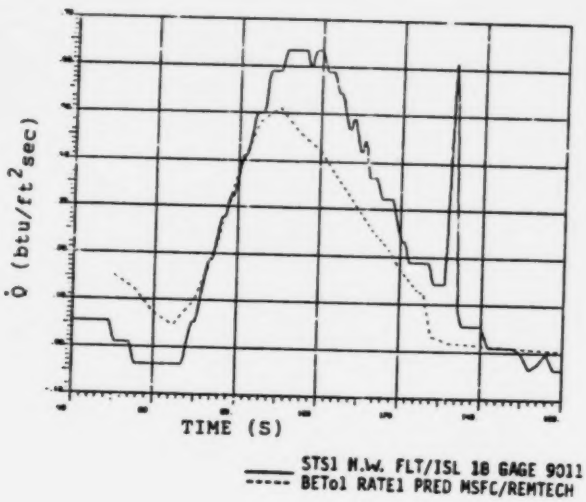

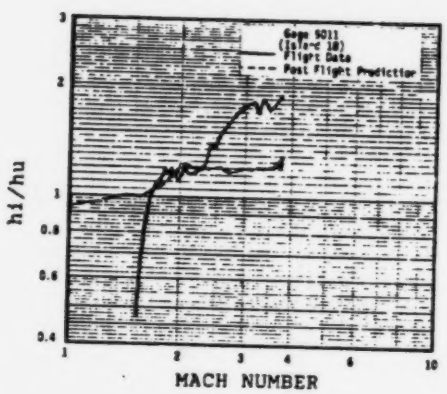

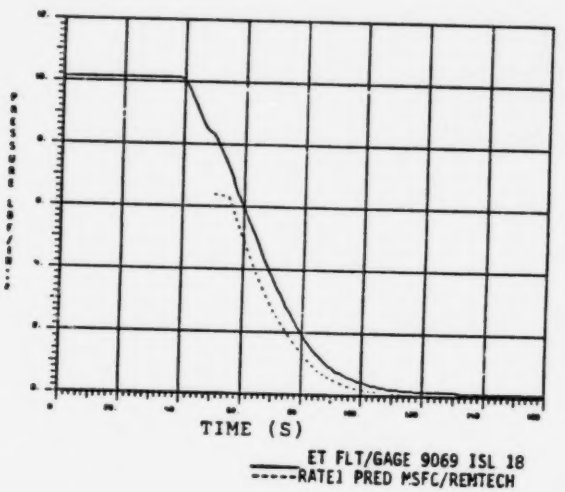

Fig. A.7a Aerothermal Analysis for Gage 9011 in STS-1

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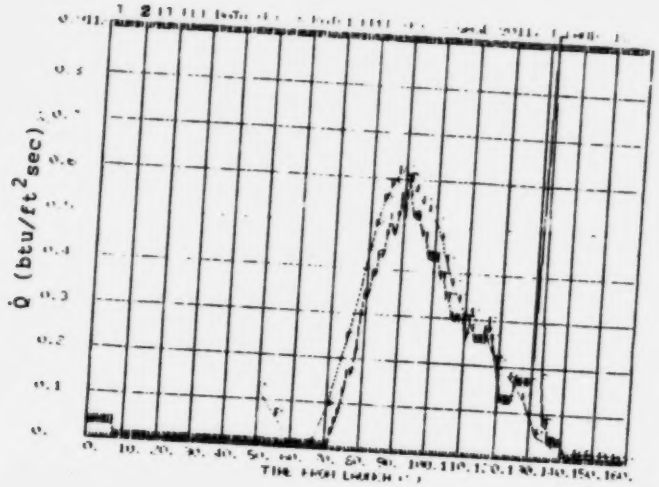

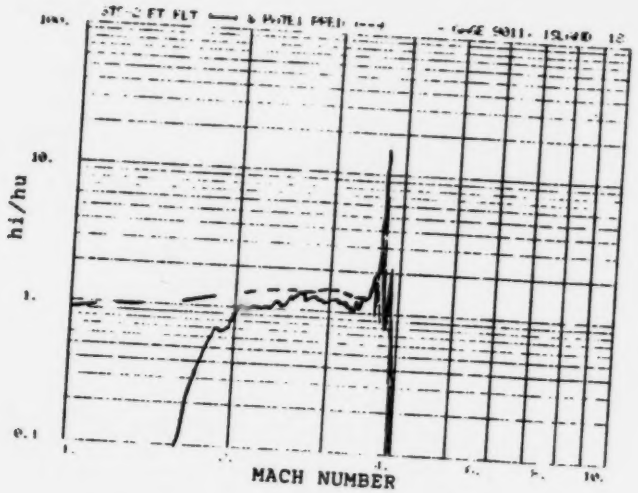

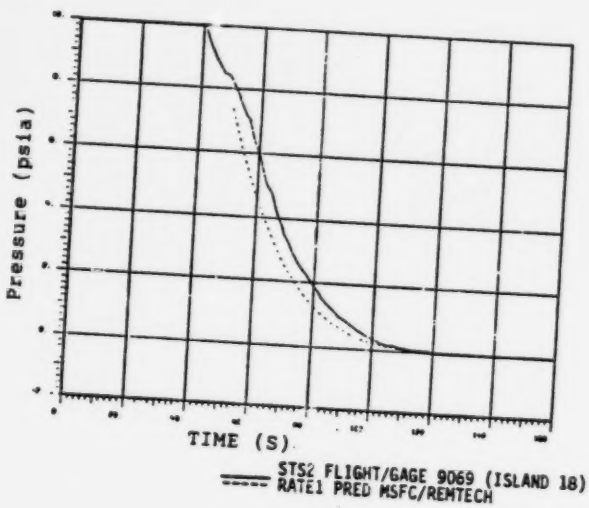

Fig. A.7b Aerothermal Analysis for Gage 9011 in STS-2

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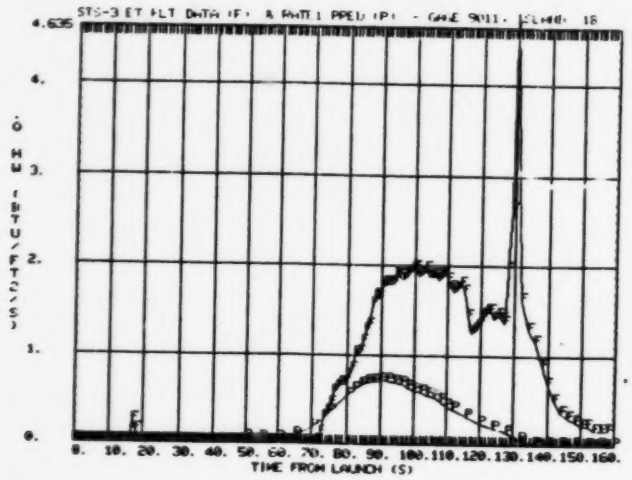

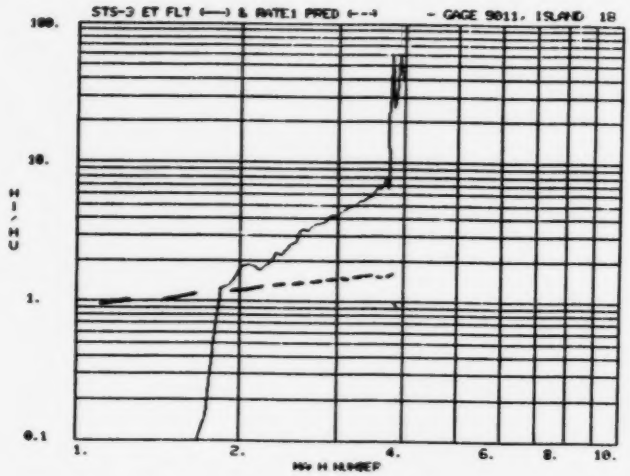

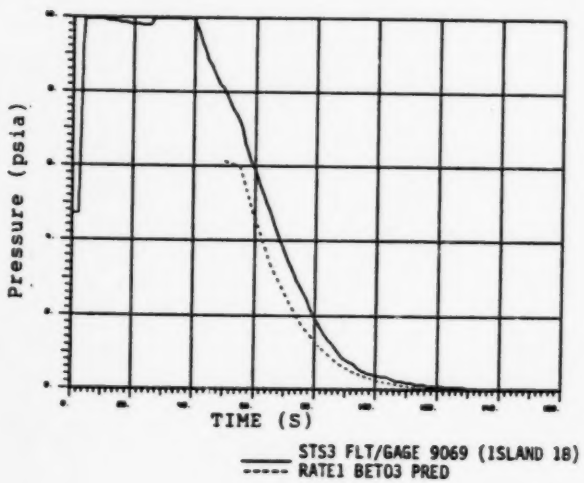

Fig. A.7c Aerothermal Analysis for Gage 9011 in STS-3

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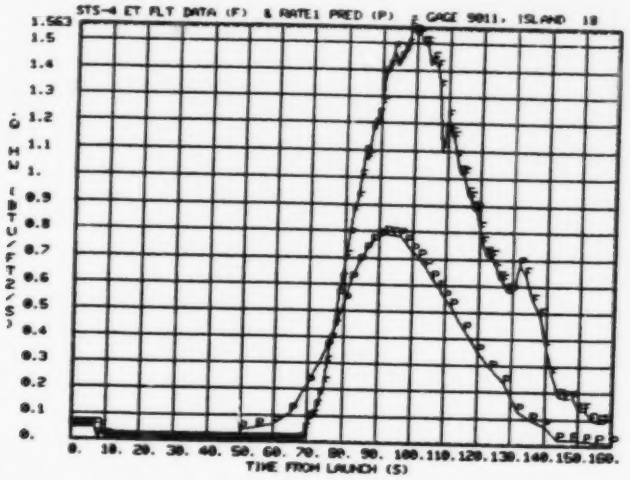

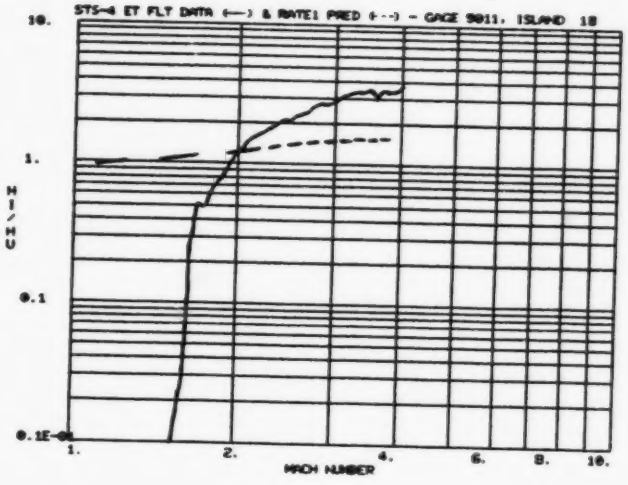

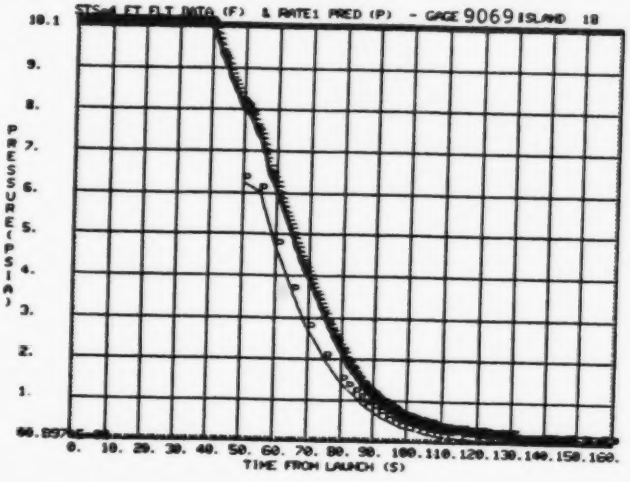

Fig. A.7d Aerothermal Analysis for Gage 9011 in STS-4

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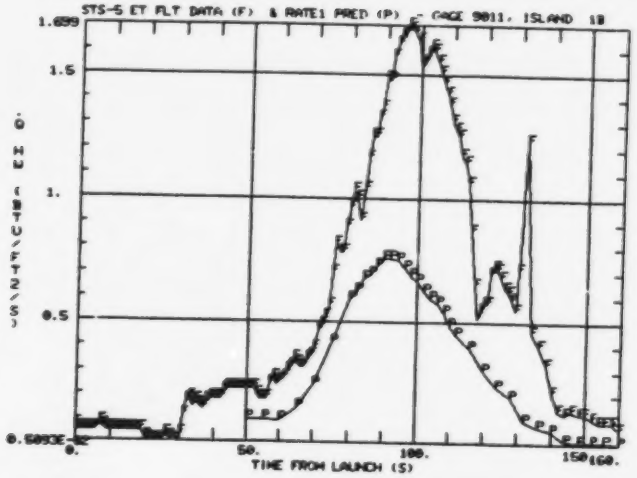
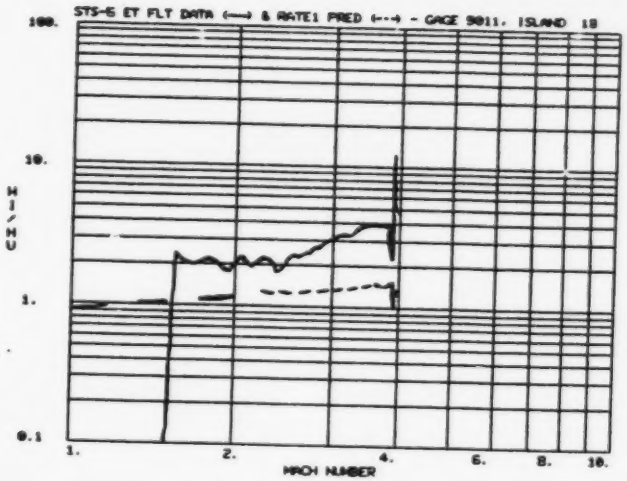




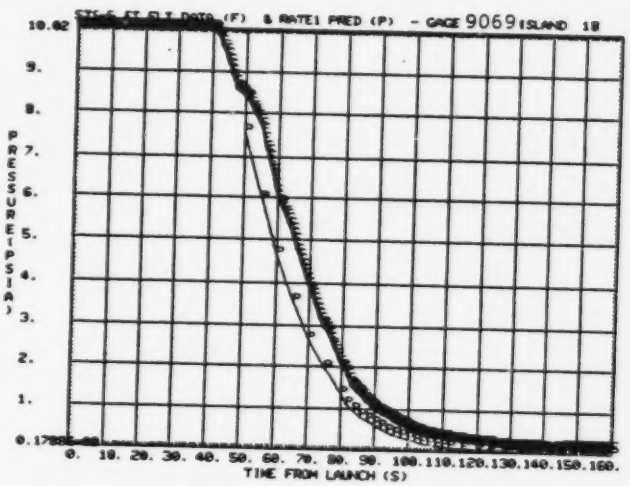
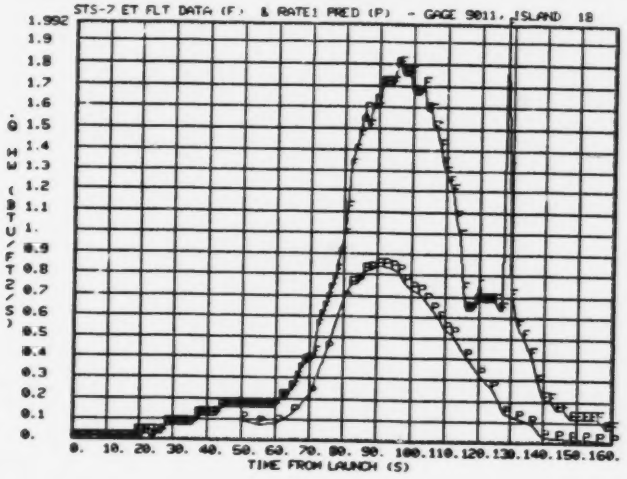
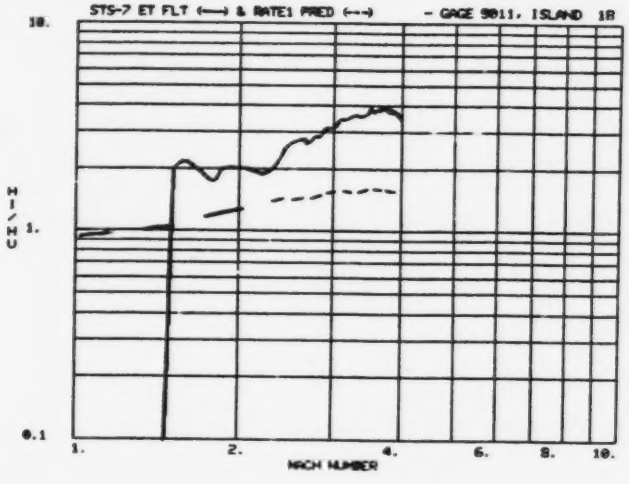


Fig. A.7e Aerothermal Analysis for Gage 9011 in STS-5





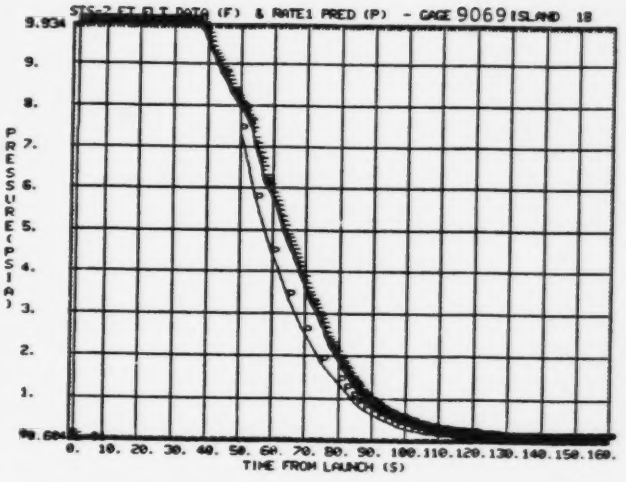


Fig. A.7f Aerothermal Analysis for Gage 9011 in STS-7

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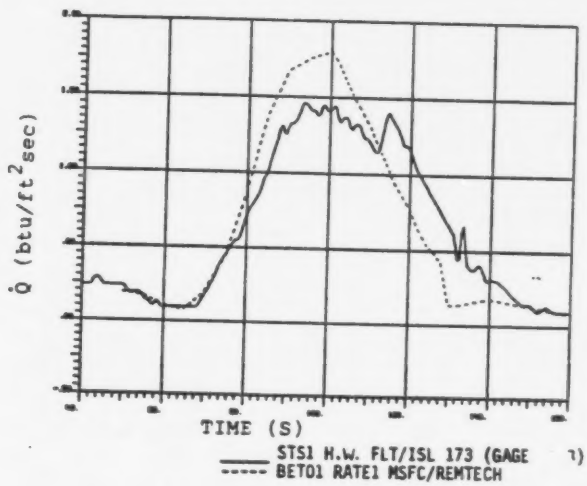
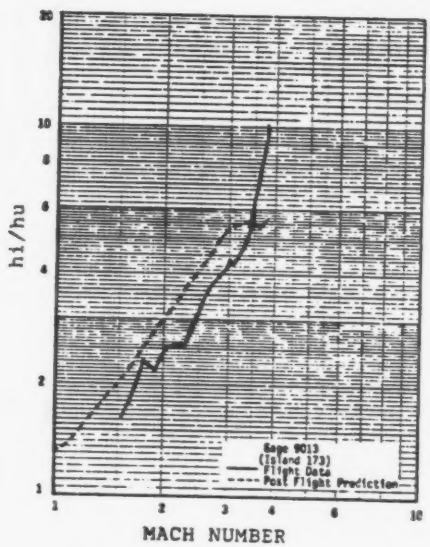




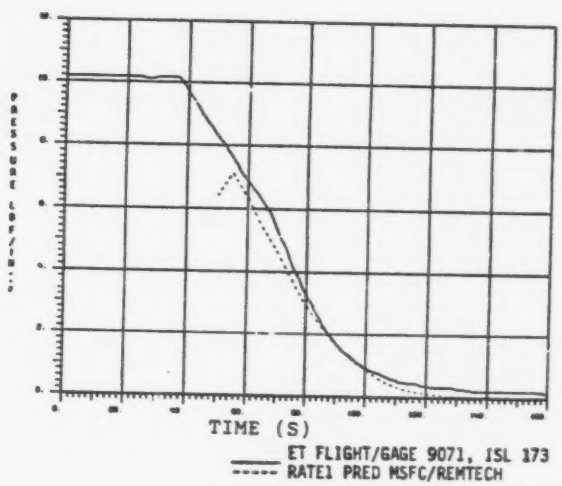
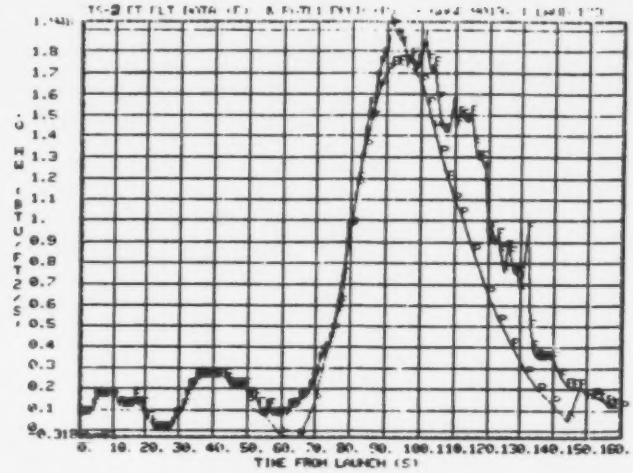
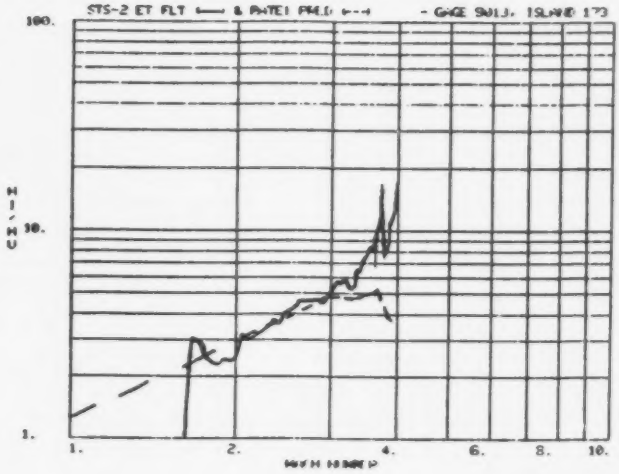


Fig. A.8a Aerothermal Analysis for Gage 9013 in STS-1





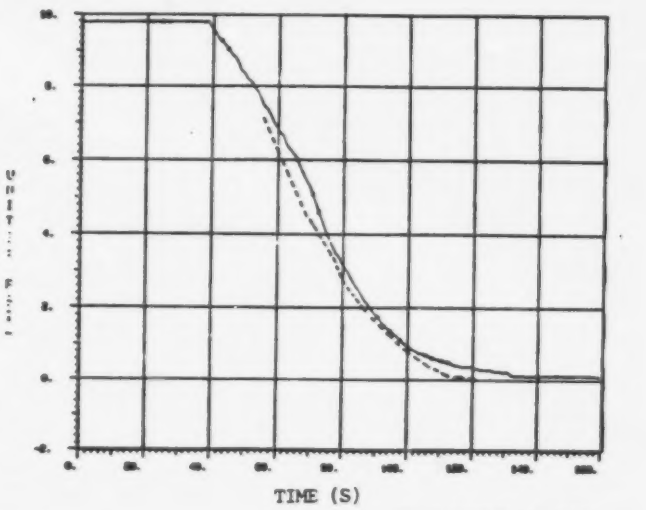


Fig.. A.8b Aerothermal Analysis for Gage 9013 in STS-2

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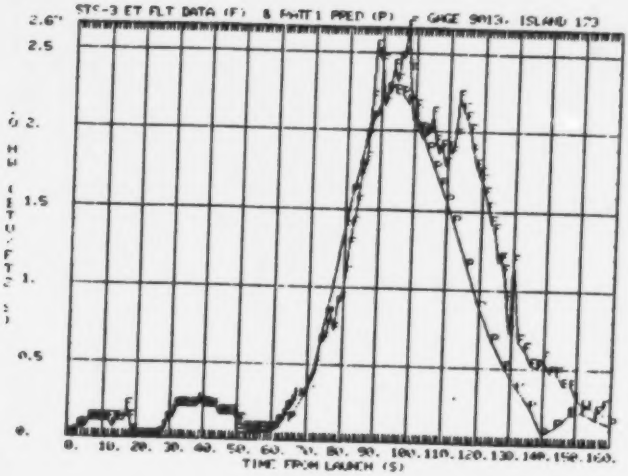
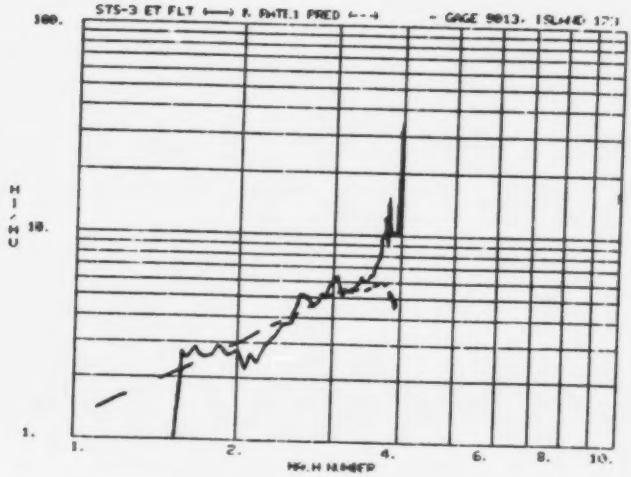




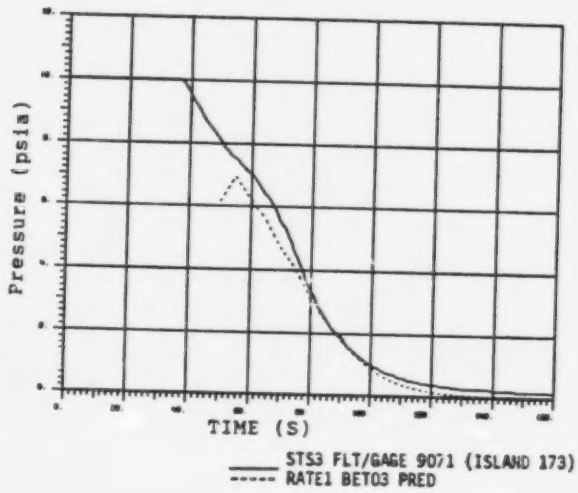
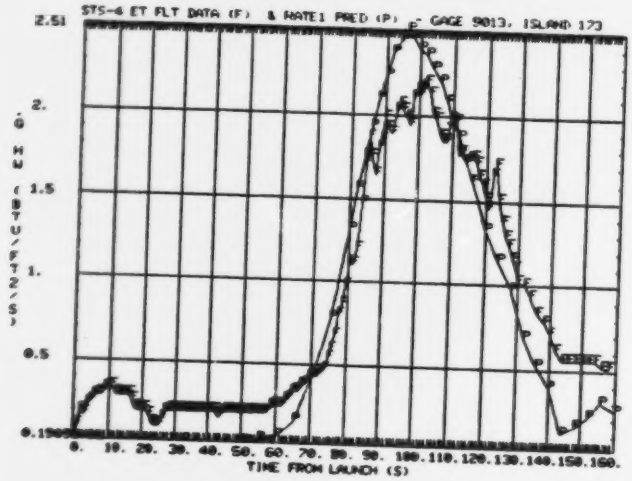
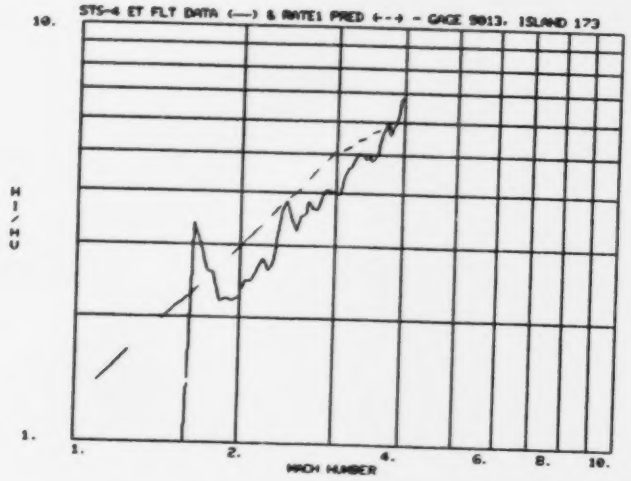


Fig. A.8c Aerothermal Analysis for Gage 9013 in STS-3





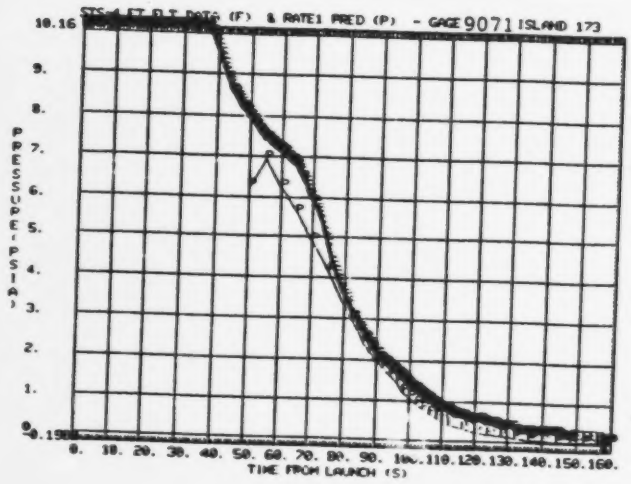


Fig. A.8d Aerothermal Analysis for Gage 9013 in STS-4

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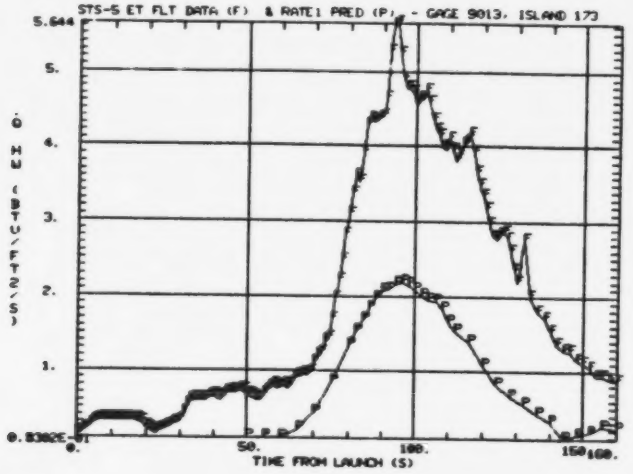

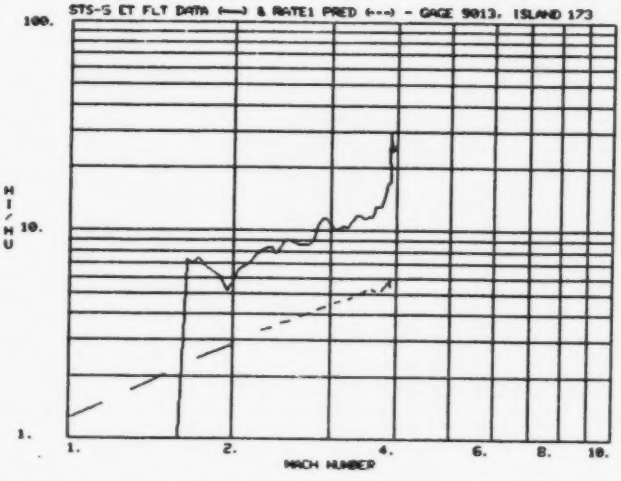

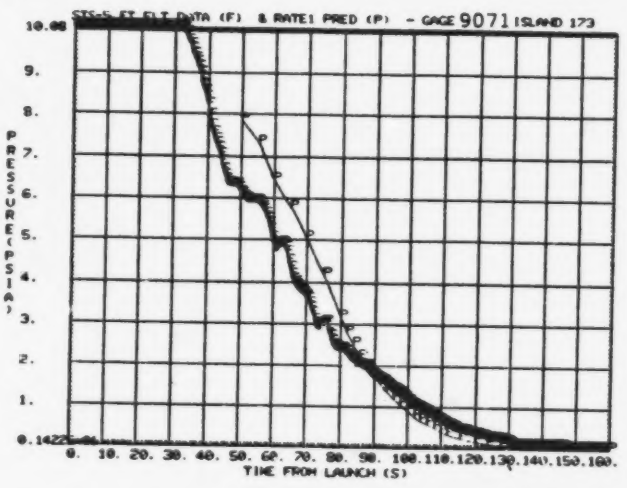

Fig. A.8e Aerothermal Analysis for Gage 9013 in STS-5

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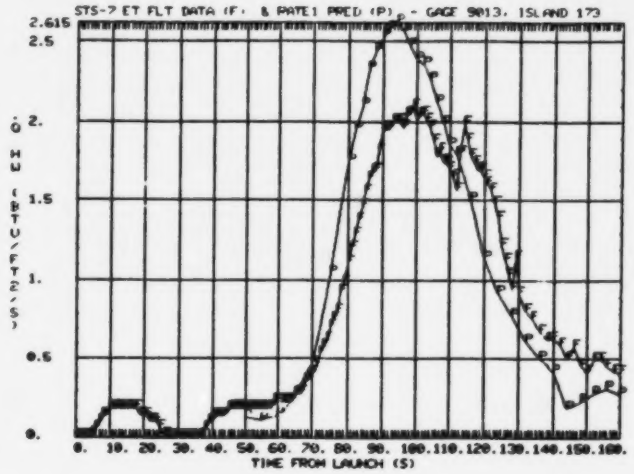

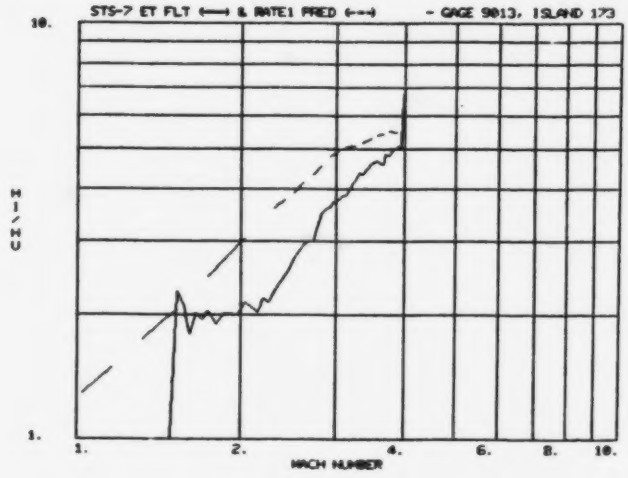

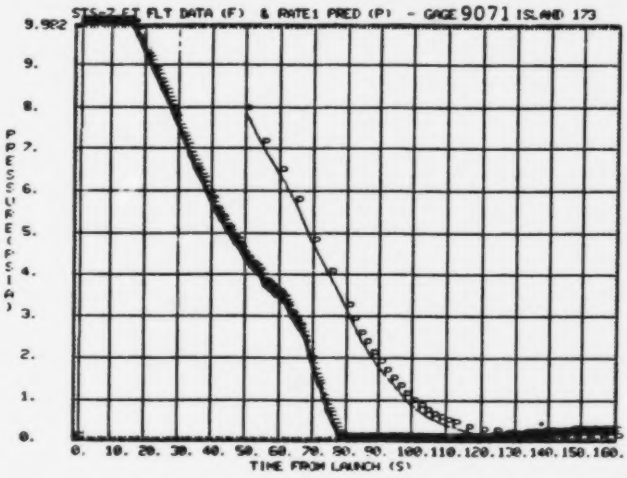

NOTE:
Bad Pressure Measurements

Fig. A.8f Aerothermal ANalysis for Gage 9013 in STS-7

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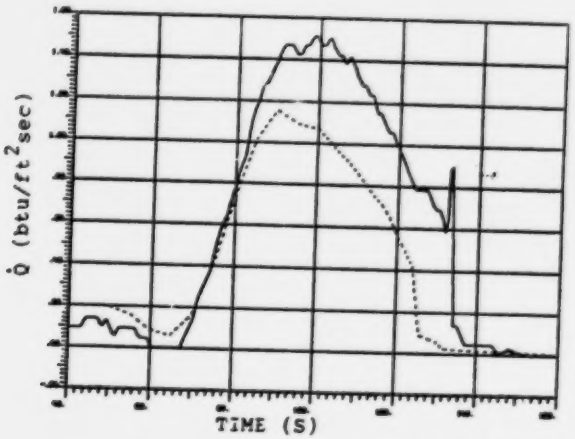


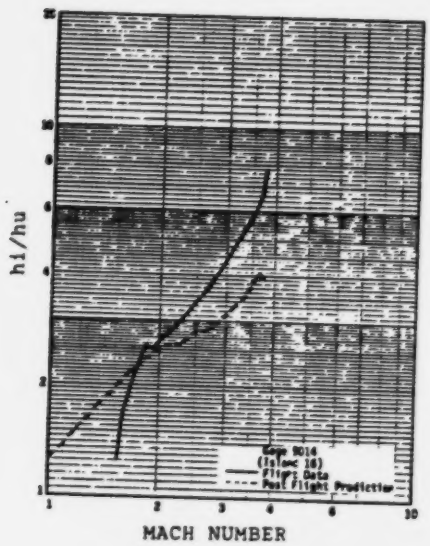
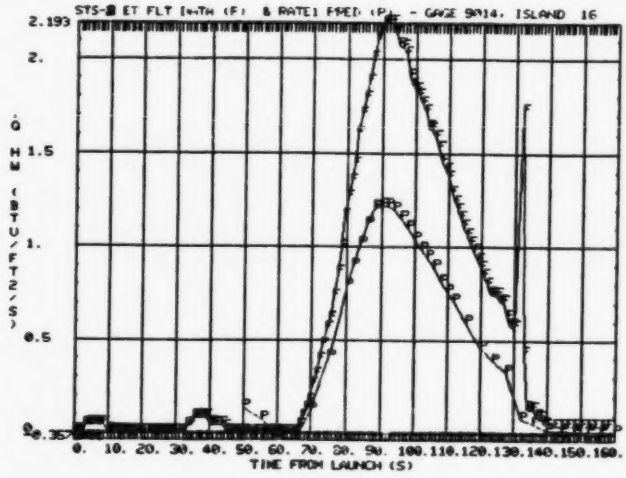


Fig. A.9a Aerothermal Analysis for GAge 9014 in STS-1



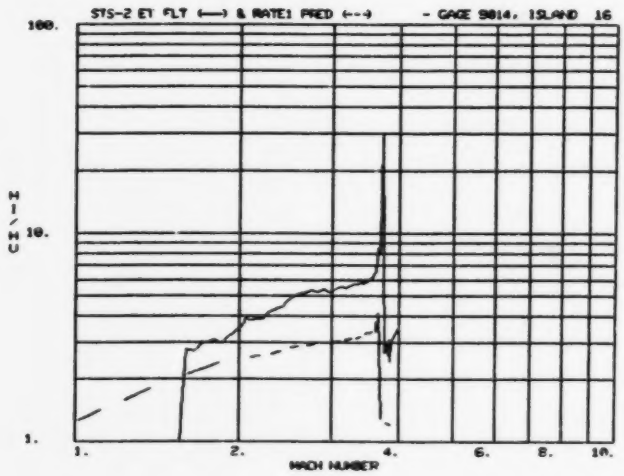
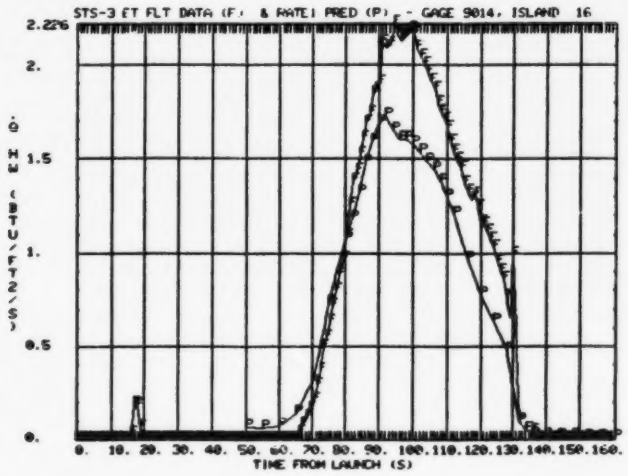


Fig. A.9b Aerothermal Analysis for Gage 9014 in STS-2



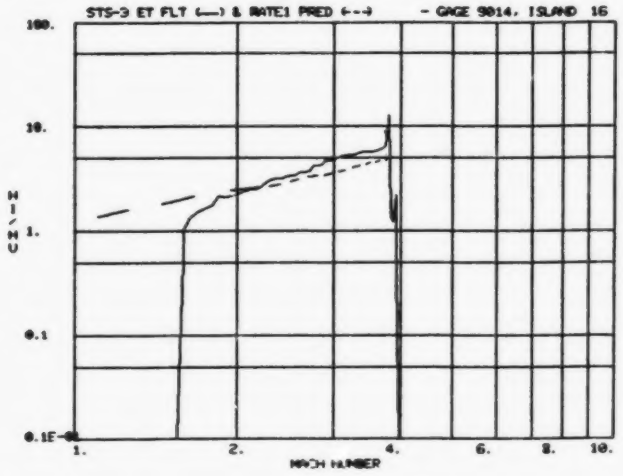
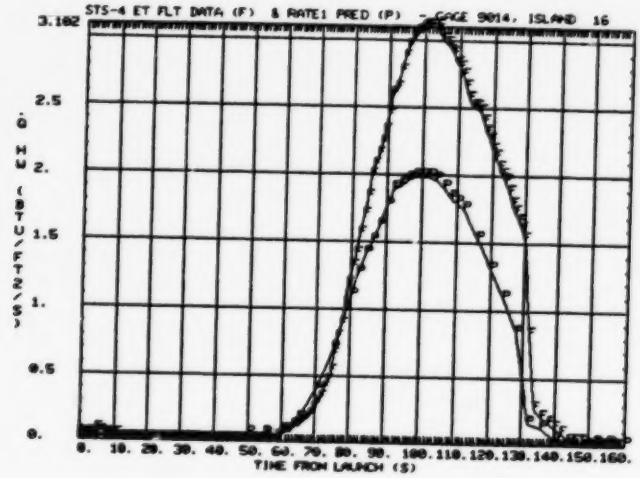


Fig. A.9c Aerothermal Analysis for Gage 9014 in STS-3



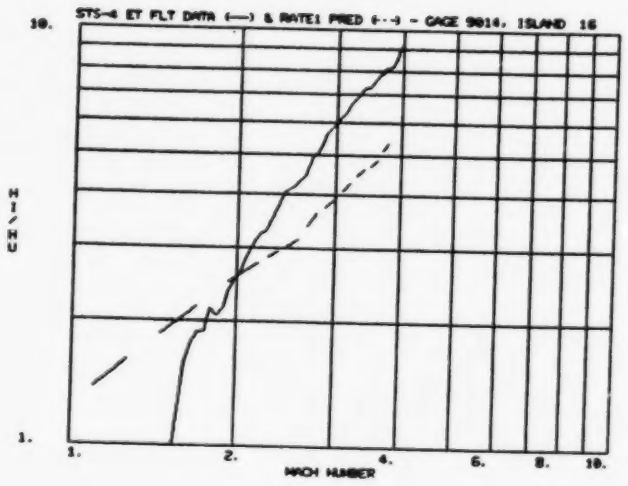


Fig. A.9d Aerothermal Analysis for GAge 9014 in STS-4

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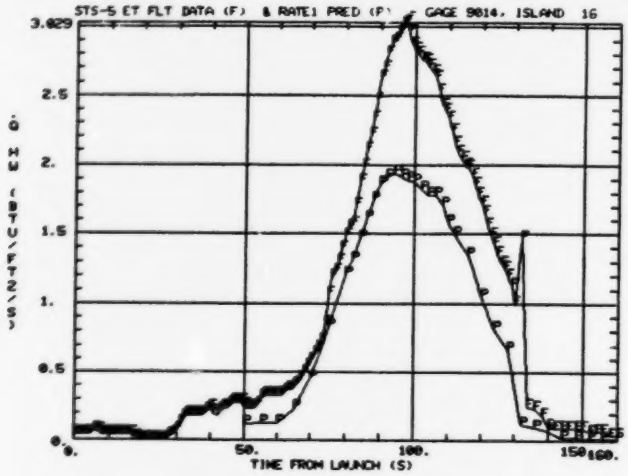


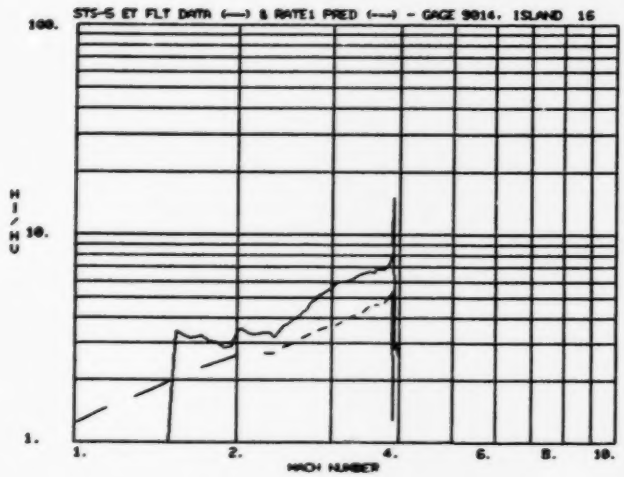
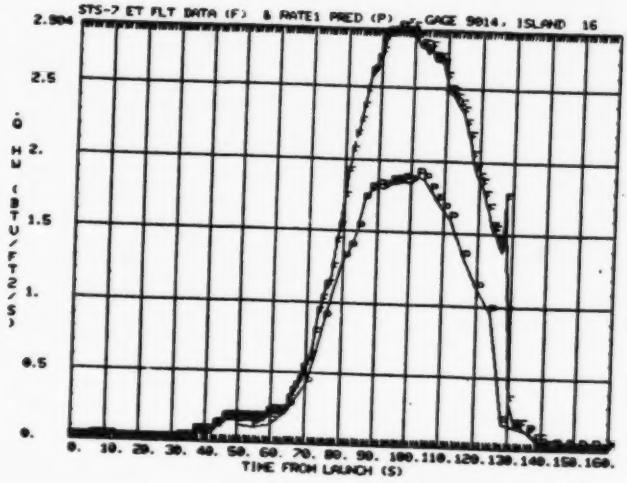


Fig. A.9e Aerothermal Analysis for Gage 9014 in STS-5



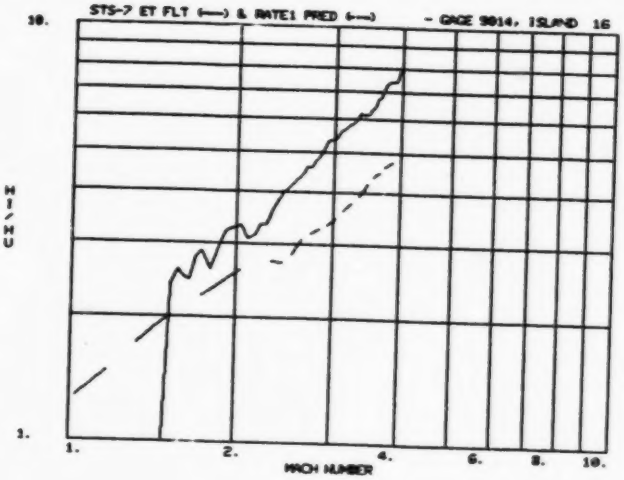


Fig. A.9f Aerothermal Analysis for Gage 9014 in STS-7

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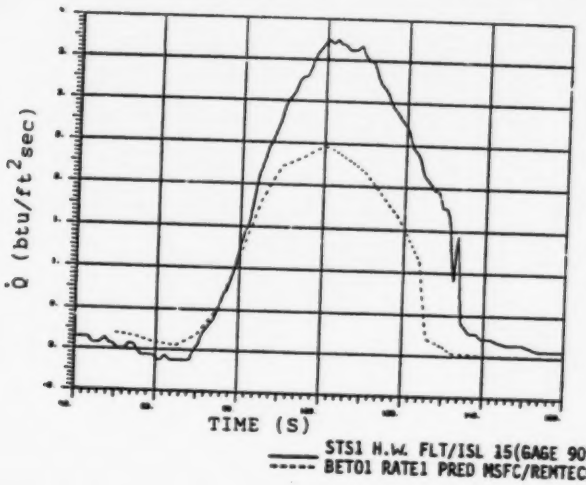

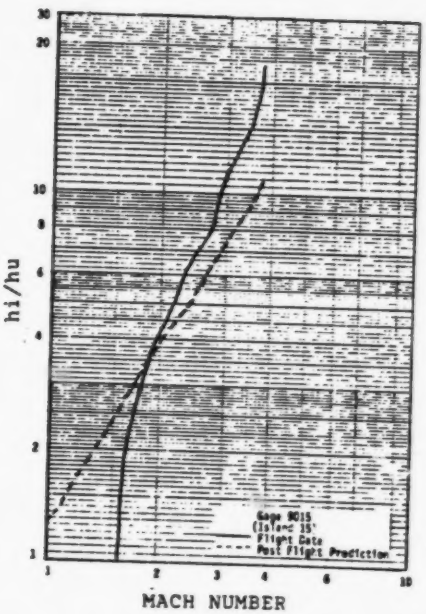

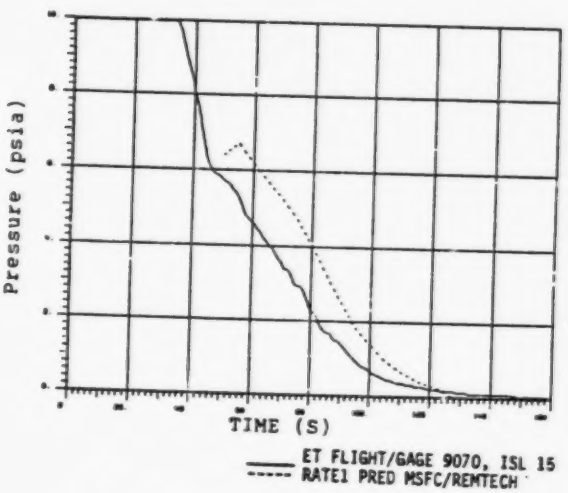

Fig. A.10a Aerothermal Analysis for Gage 9015 in STS-1

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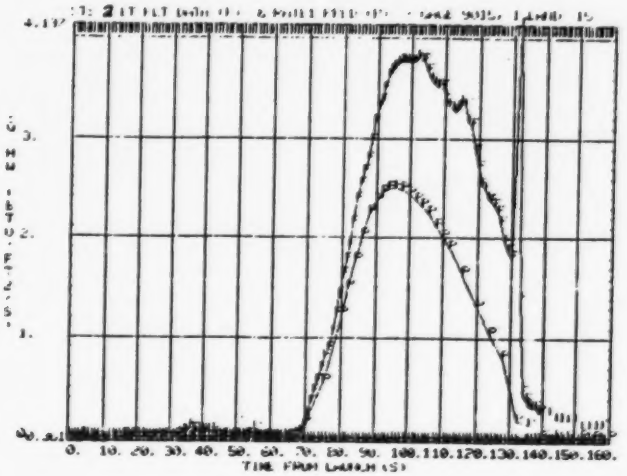
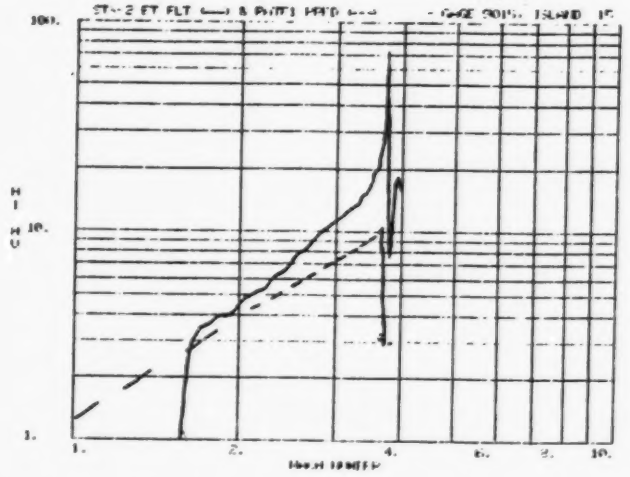




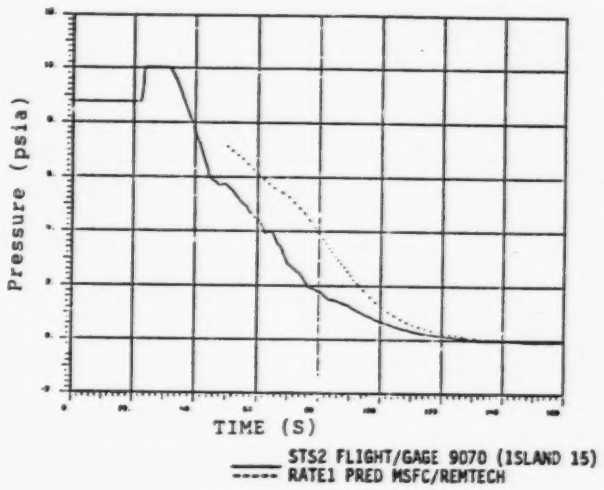
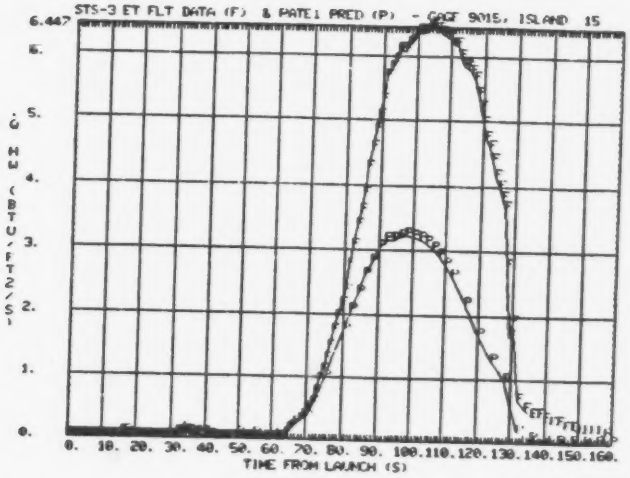
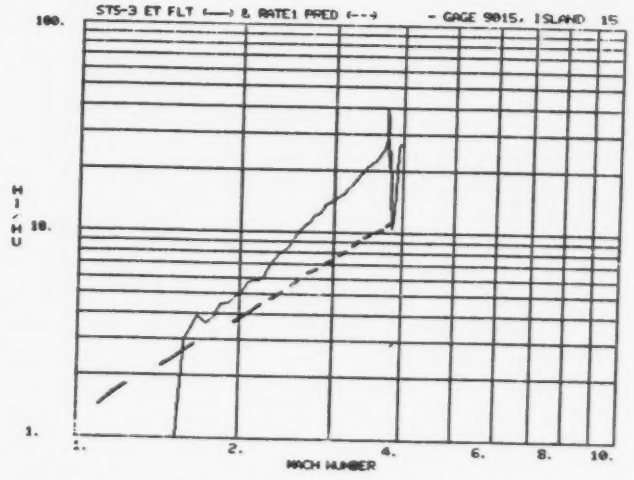


Fig. A.10b Aerothermal Analysis for Gage 9015 in STS-2





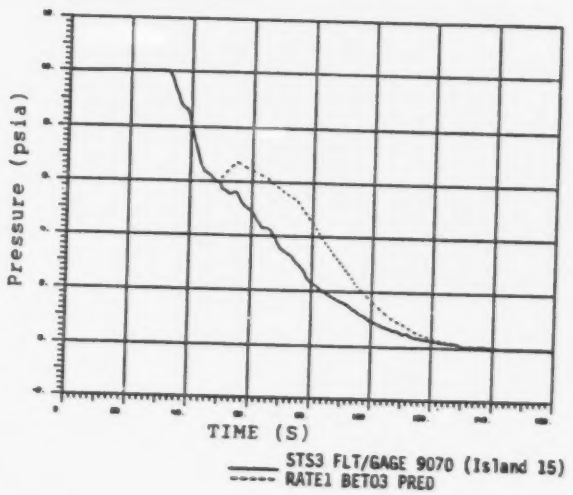


Fig. A.10c Aerothermal Analysis for Gage 9015 in STS-3

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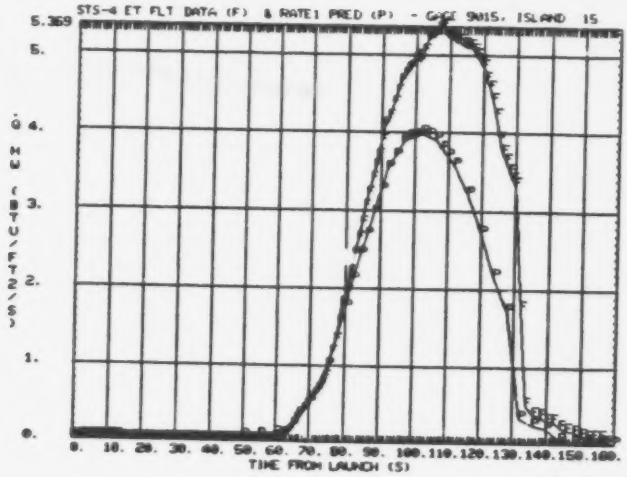
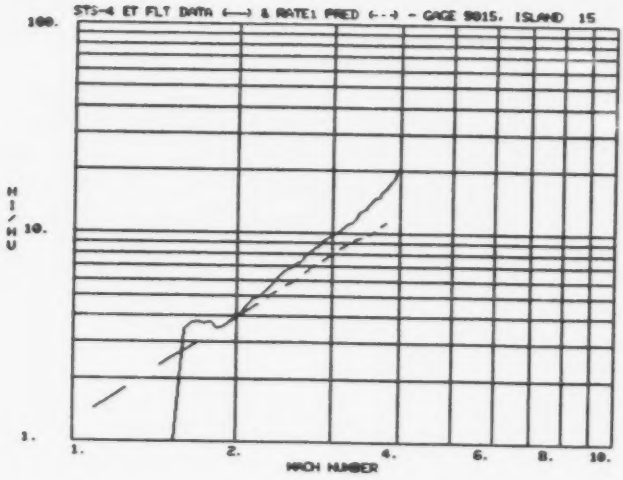




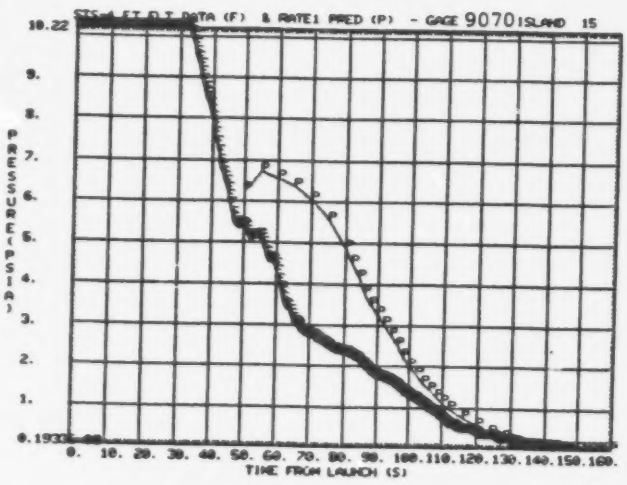
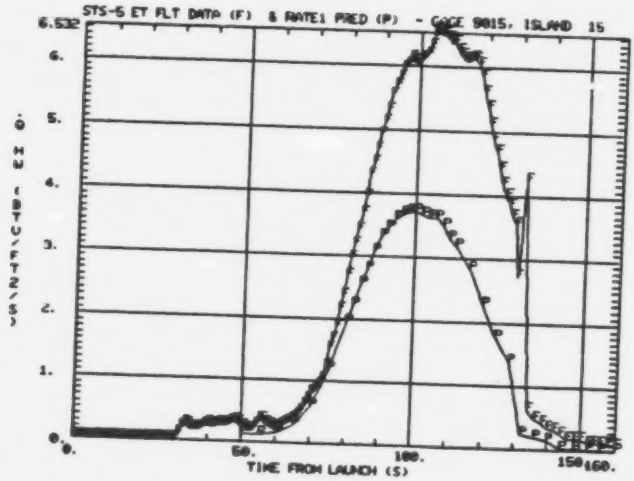
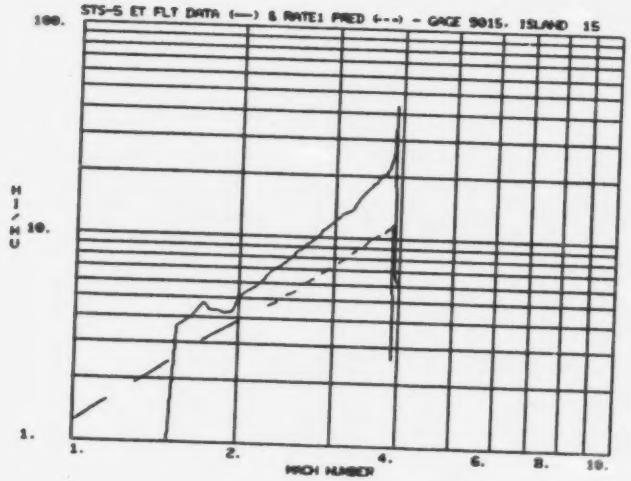


Fig. A.10d Aerothermal Analysis for Gage 9015 in STS-4





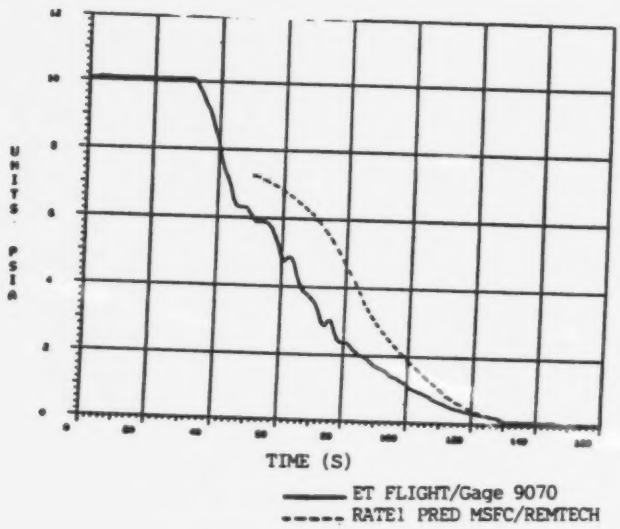
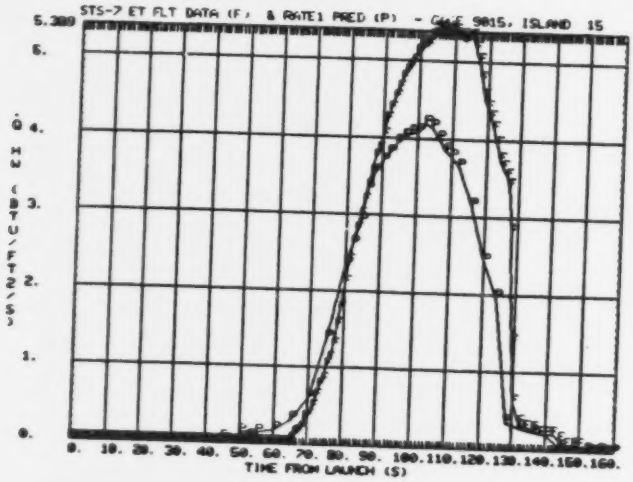
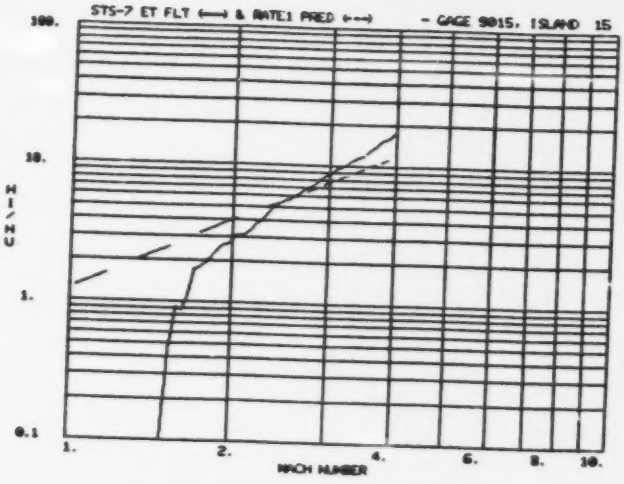


Fig. A.10e Aerothermal Analysis for GAge 9015 in STS-5





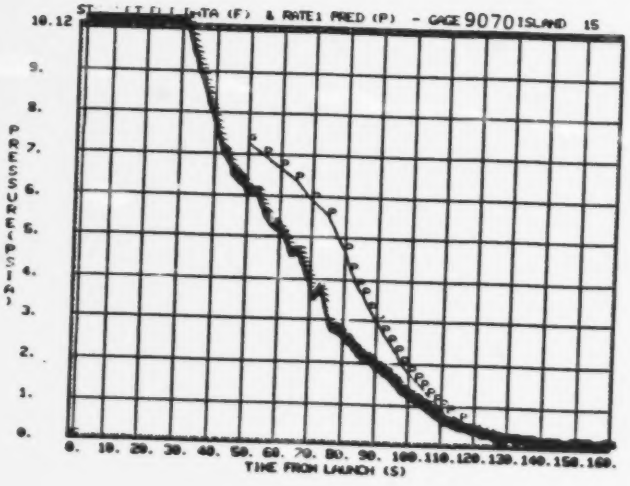


Fig. A.10f Aerothermal Analysis for Gage 9015 in STS-7

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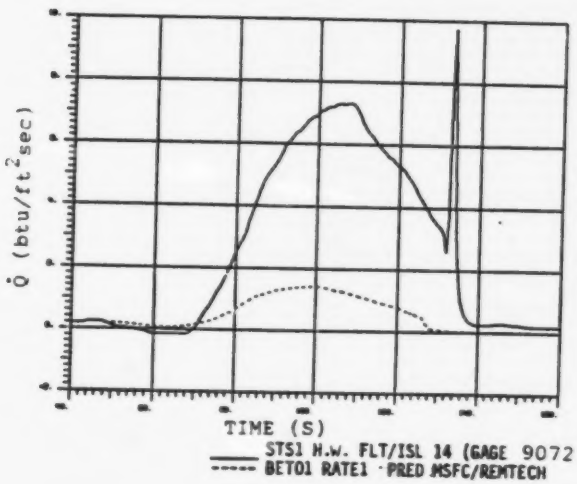


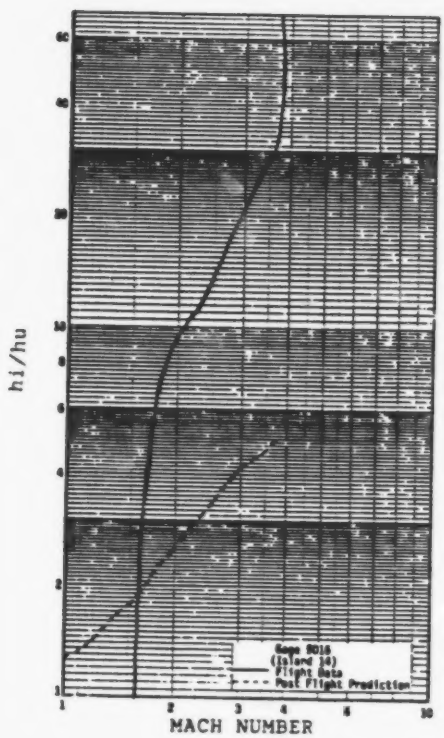
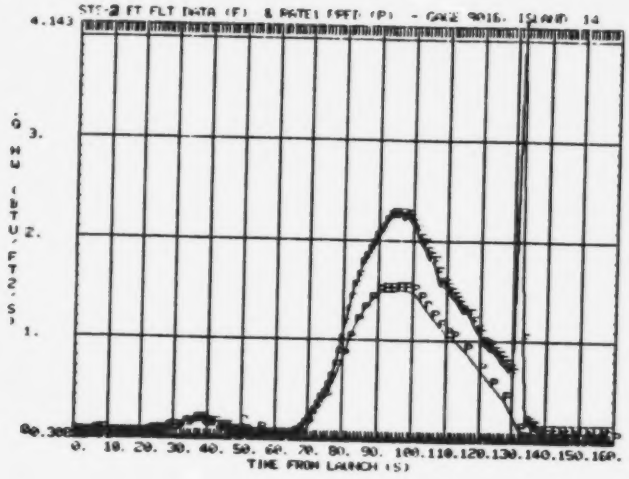


Fig. A.11a Aerothermal Analysis for Gage 9016 in STS-1



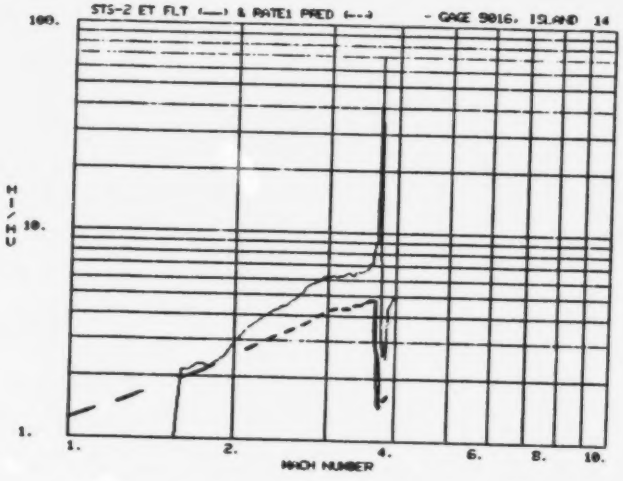
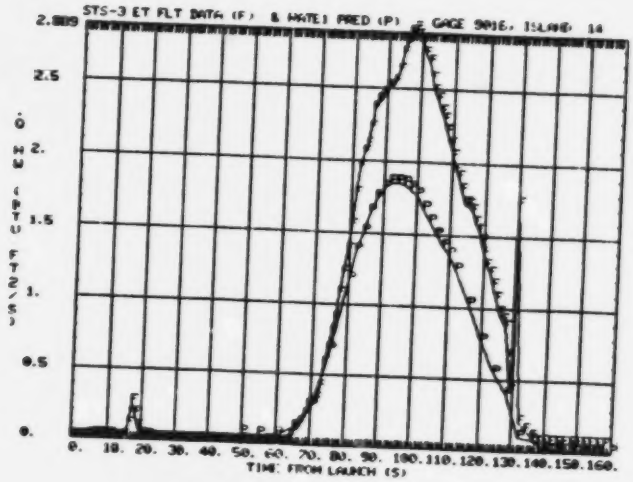


Fig. A.11b Aerothermal Analysis for Gage 9016 in STS-2



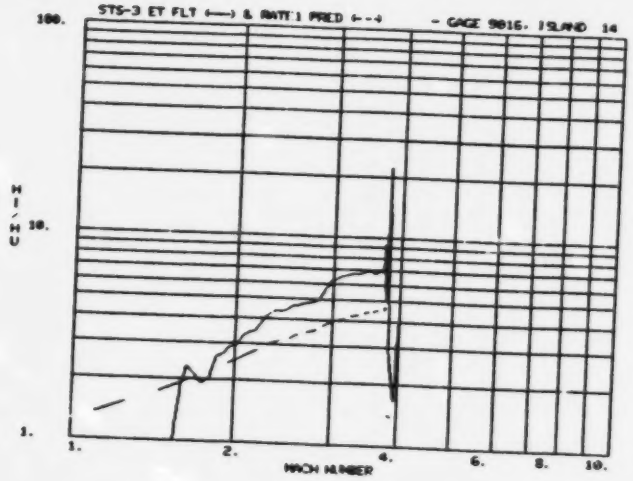
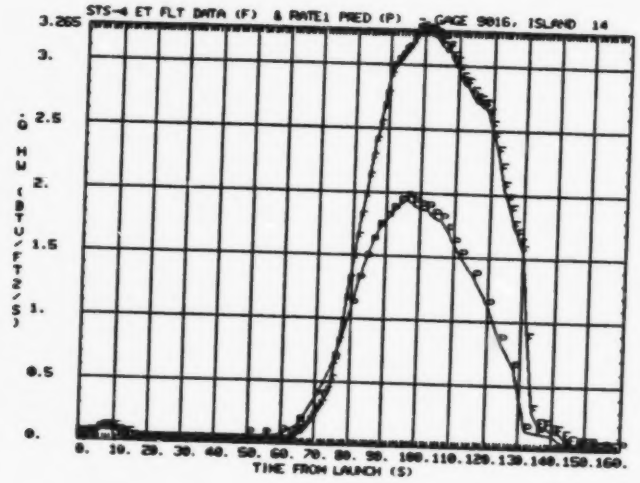


Fig. A.11c Aerothermal Analysis for Gage 9016 in STS-3



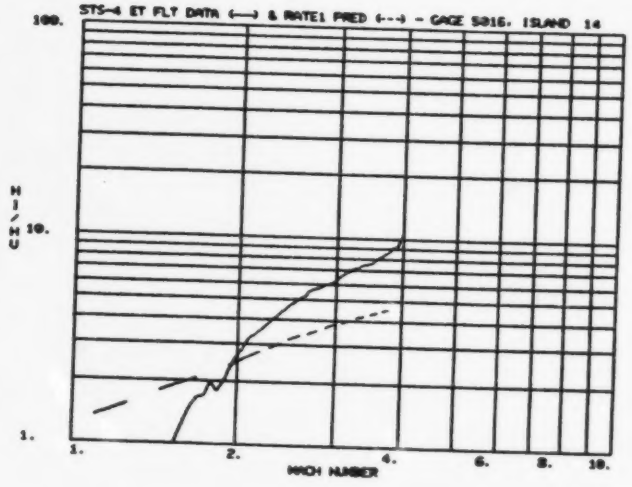


Fig. A.11d Aerothermal Analysis for Gage 9016 in STS-4

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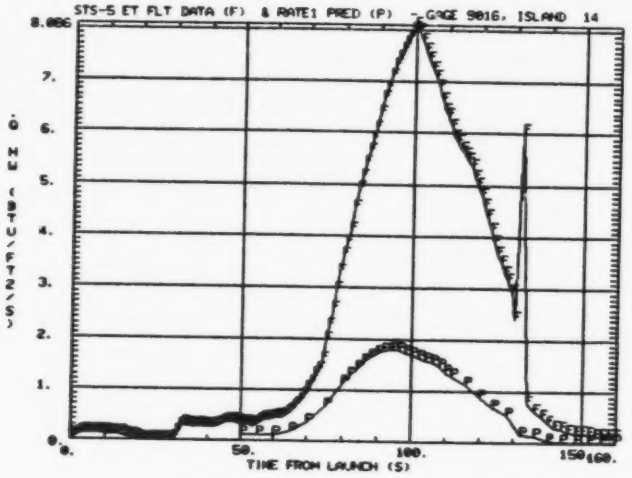


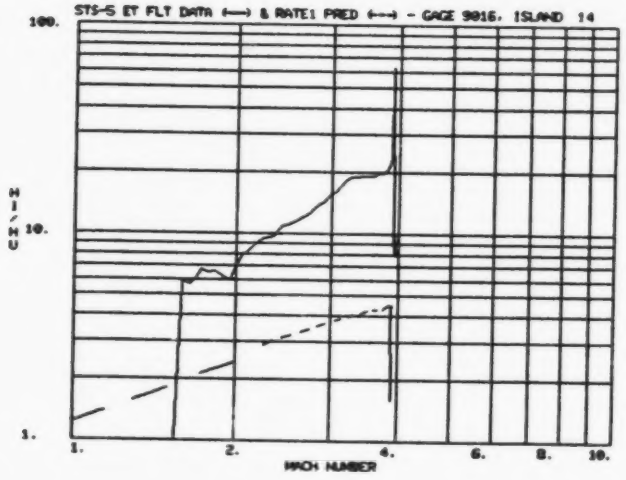
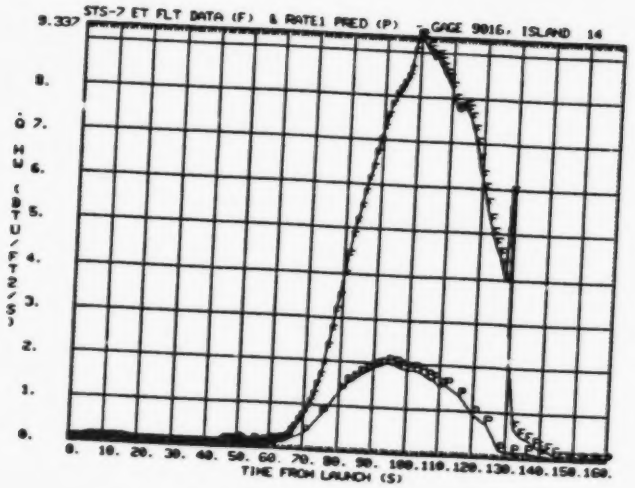


Fig. A.11e Aerothermal Analysis for GAge 9016 in STS-5



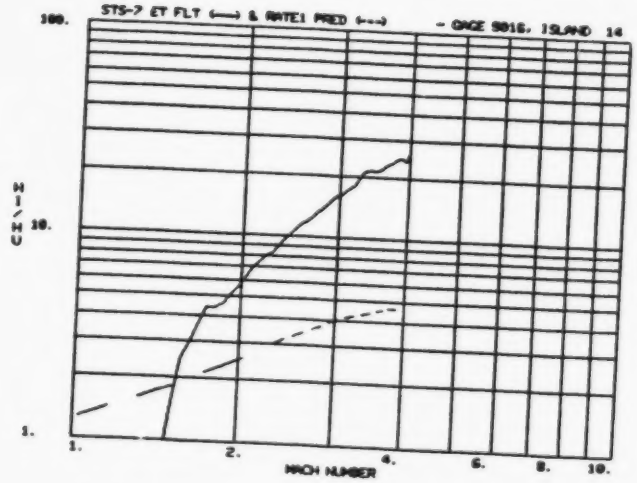


Fig. A.11f Aerothermal Analysis for Gage 9016 in STS-7

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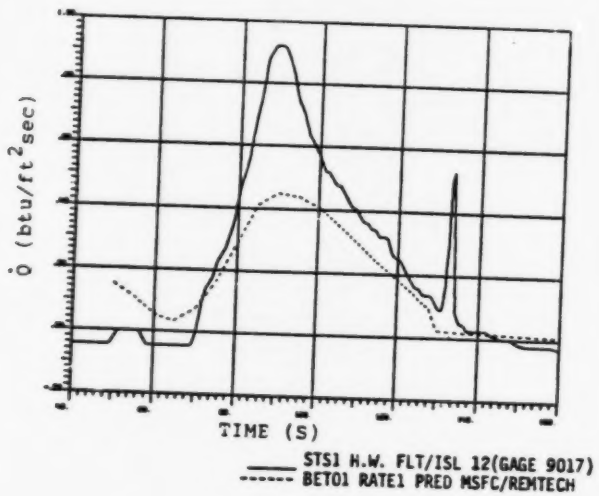


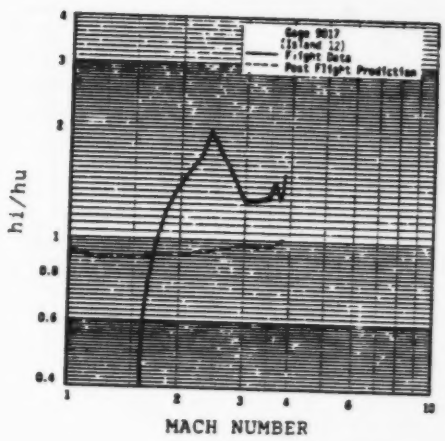
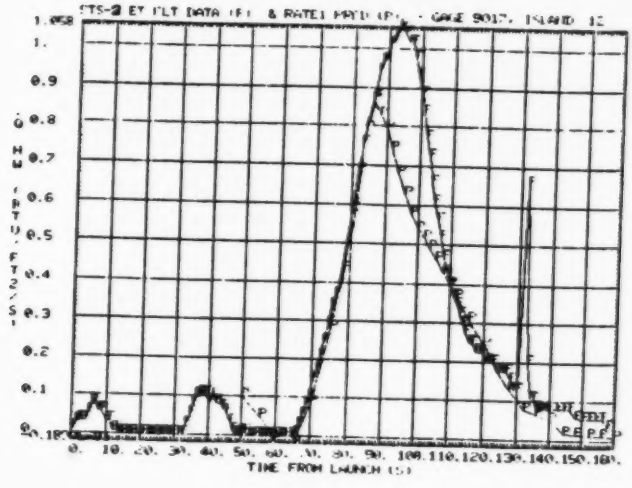


Fig. A.12a Aerothermal Analysis for Gage 9017 in STS-1



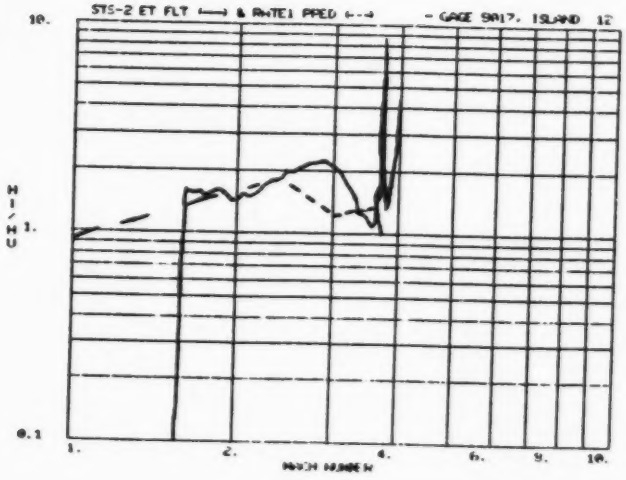
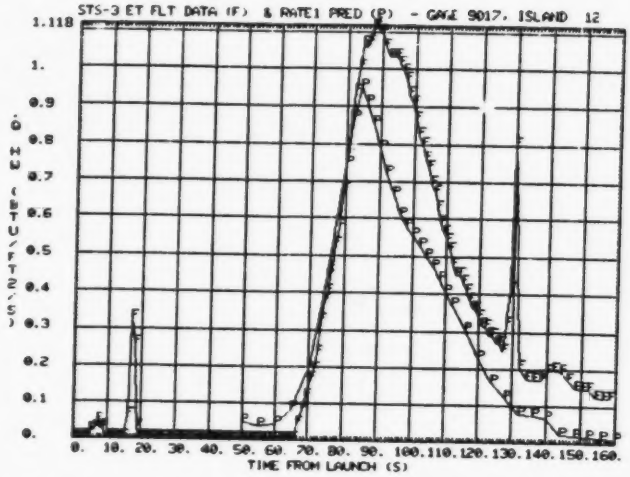


Fig. A.12b Aerothermal Analysis for Gage 9017 in STS-2



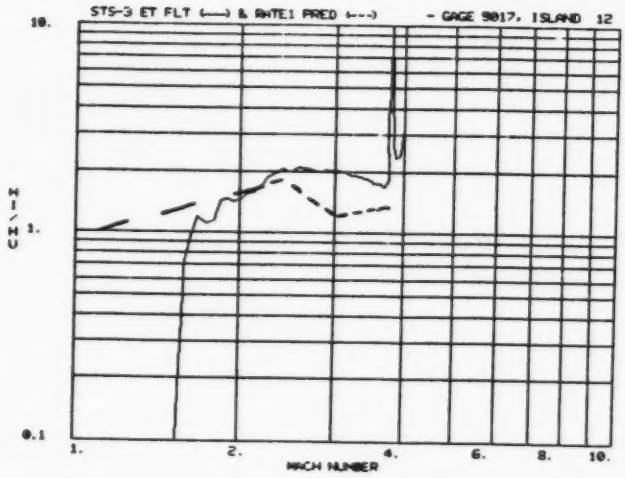


Fig. A.12c Aerothermal Analysis for Gage 9017 in STS-3

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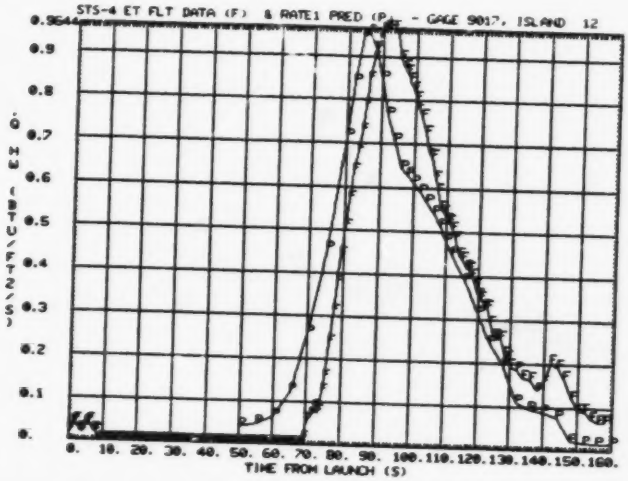


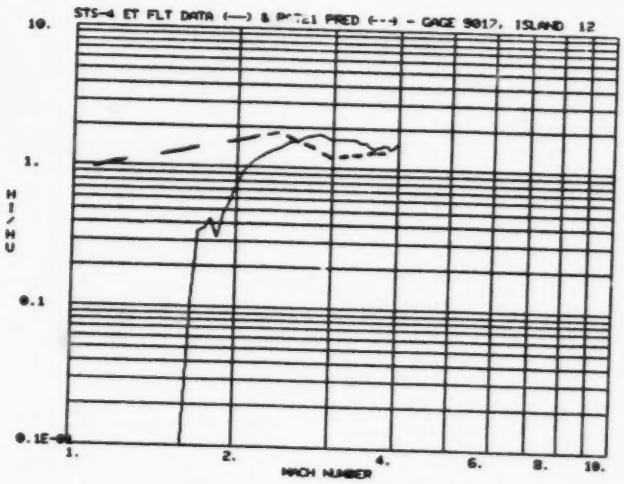
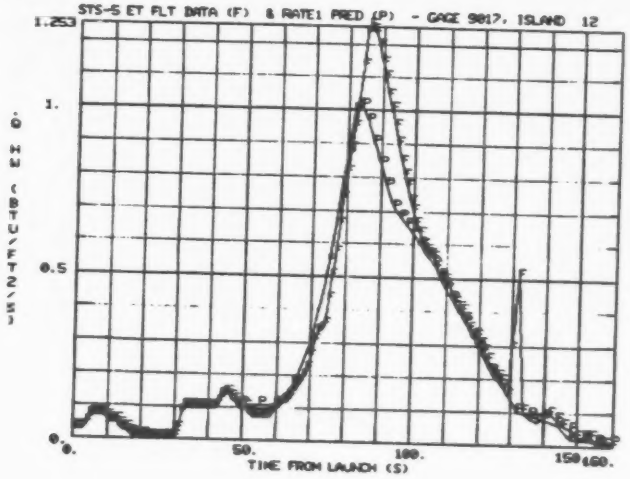


Fig. A.12d Aerothermal Analysis for Gage 9017 in STS-4



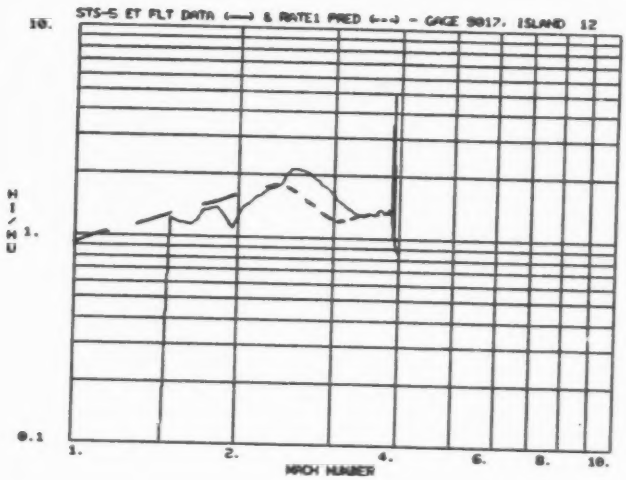


Fig. A.12e Aerothermal Analysis for Gage 9017 in STS-5

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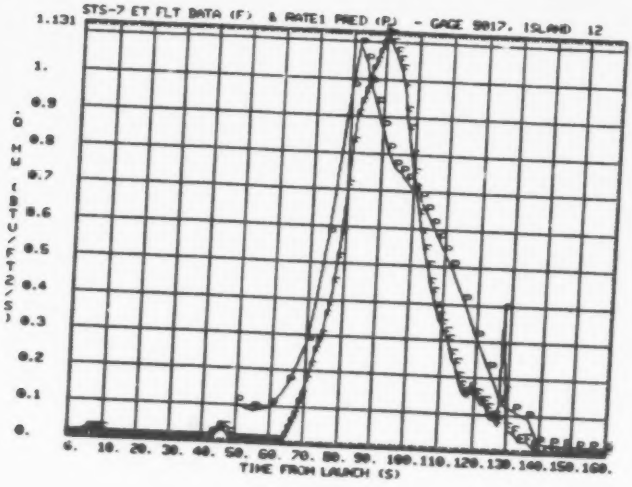

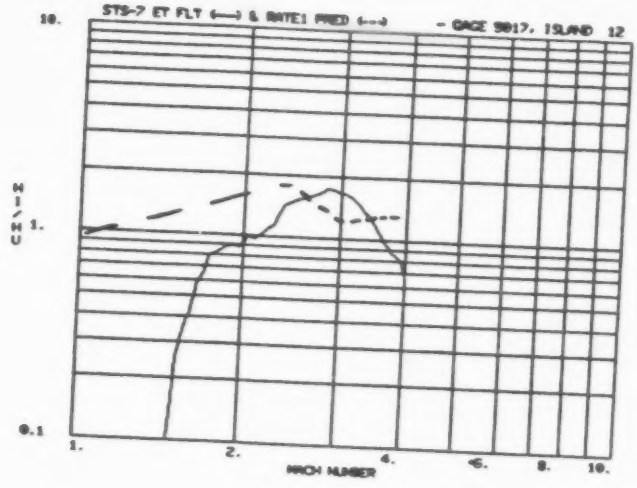

Fig. A.12f Aerothermal Analysis for Gage 9017 in STS-7

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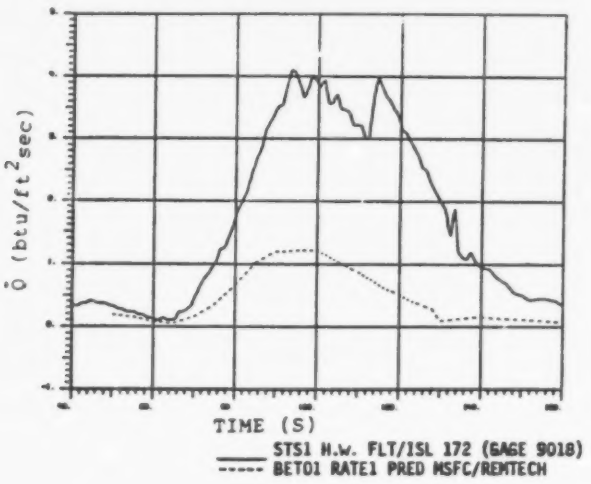


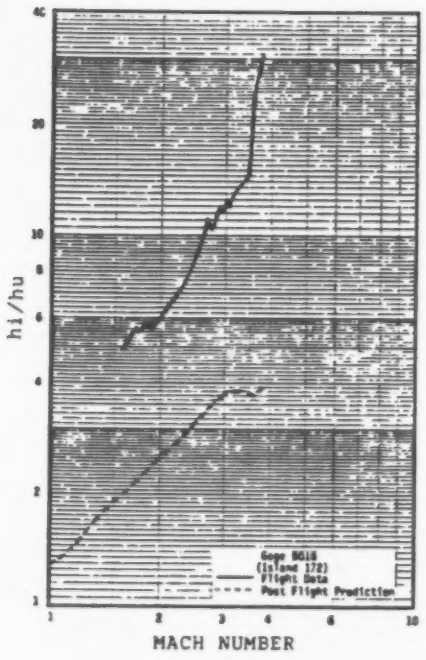
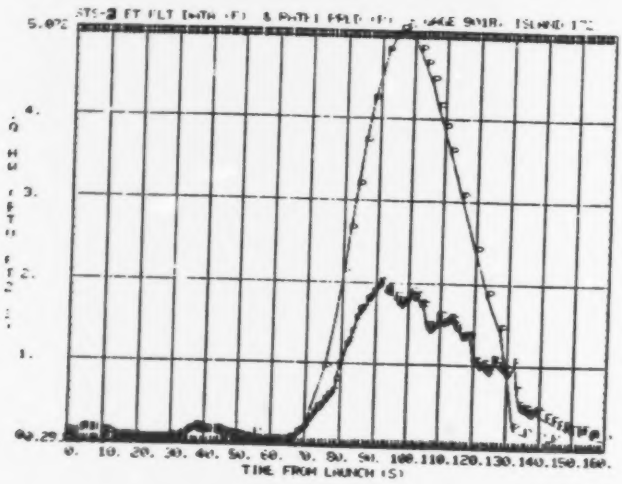


Fig. A.13a Aerothermal Analysis for Gage 9018 in STS-1



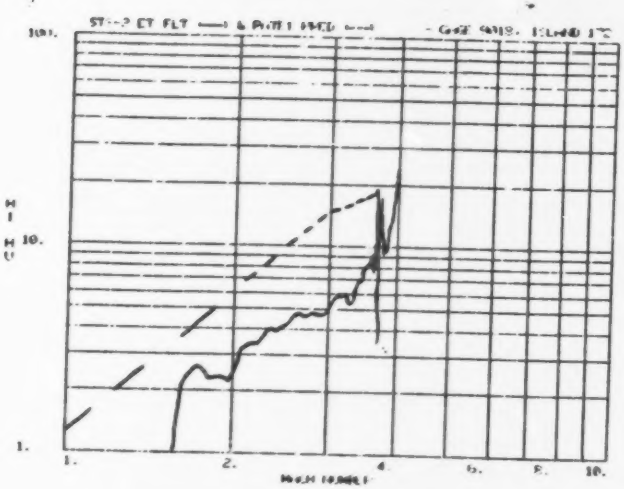


Fig. A.13b Aerothermal Analysis for Gage 9018 in STS-2

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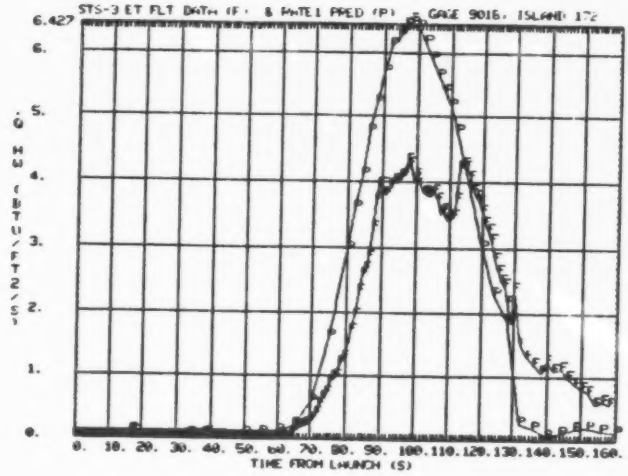


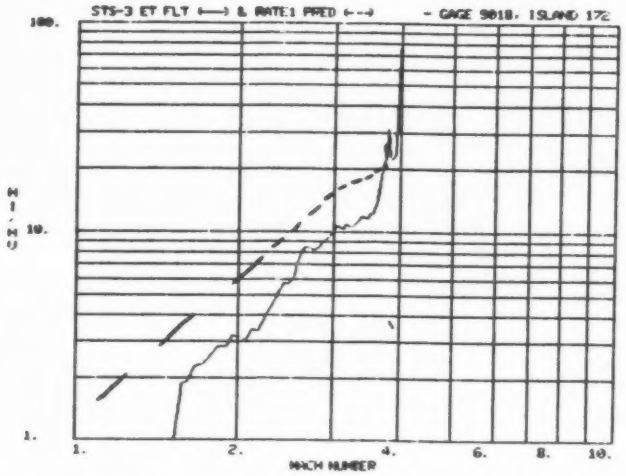
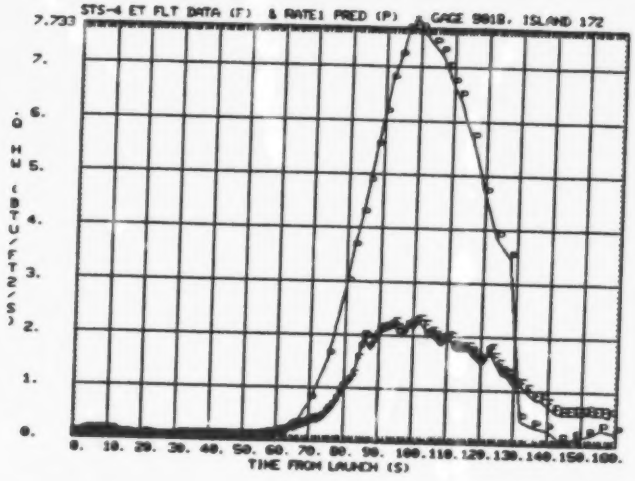


Fig. A.13c Aerothermal Analysis for Gage 9018 In STS-3



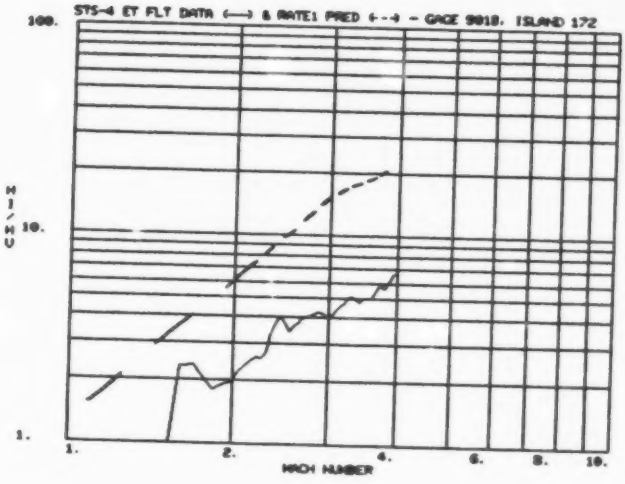


Fig. A.13d Aerothermal Analysis for Gage 9018 in STS-4

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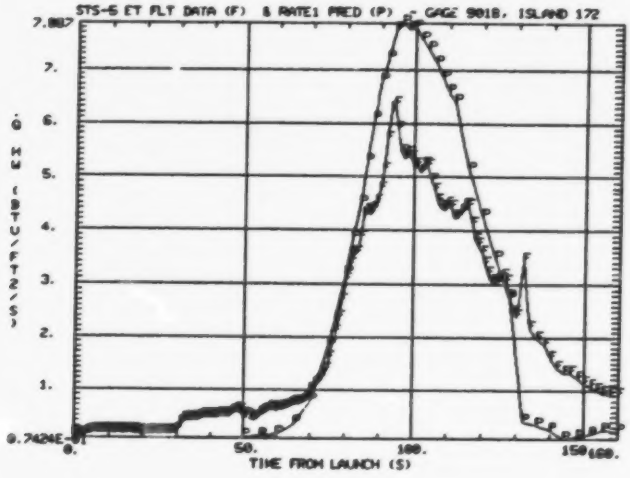


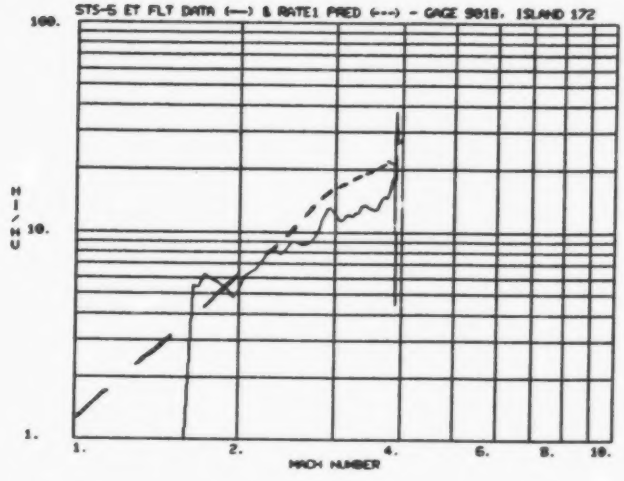
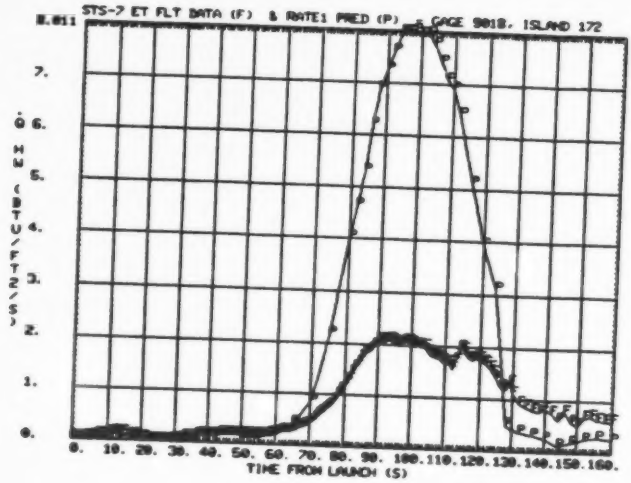


Fig. A.13e Aerothermal Analysis for Gage 9018 in STS-5



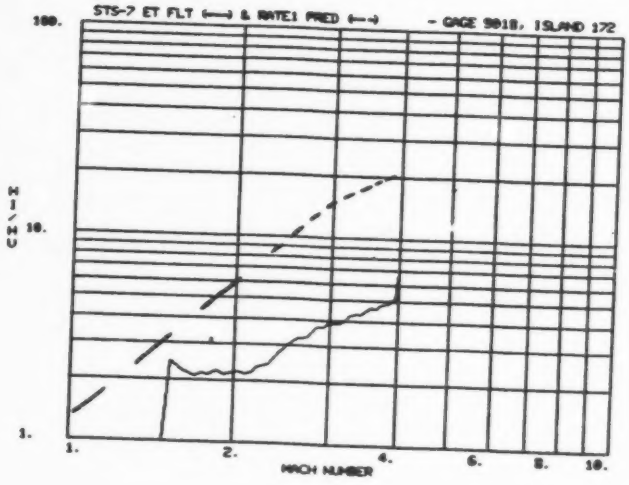


Fig. A.13f Aerothermal Analysis for Gage 9018 in STS-7

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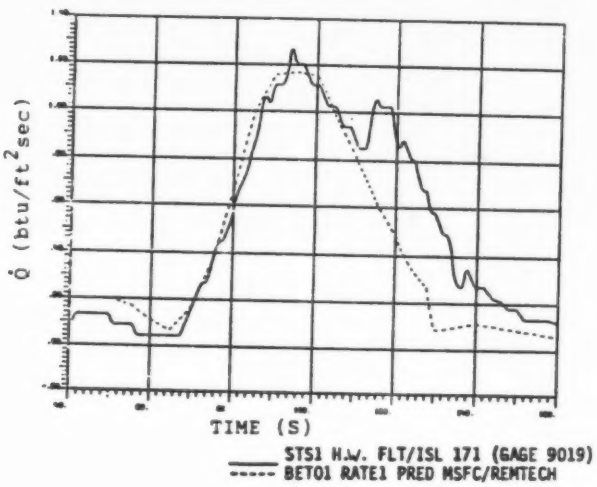

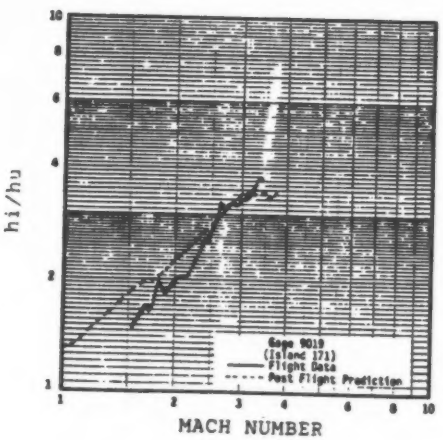

Fig. A.14a Aerothermal Analysis for Gage 9019 in STS-1

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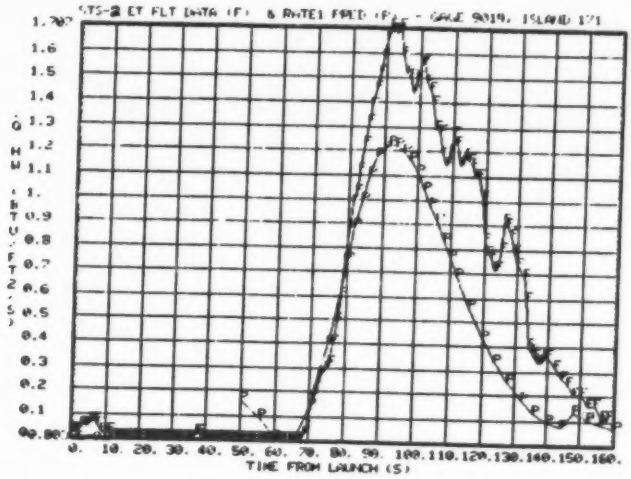

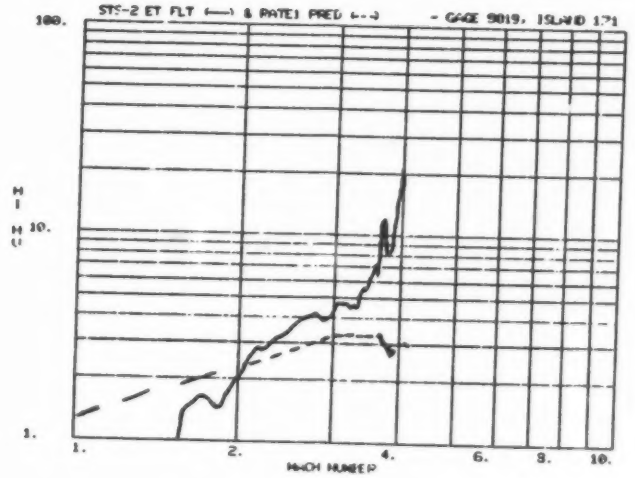

Fig. A.14b Aerothermal Analysis for Gage 9019 in STS-2

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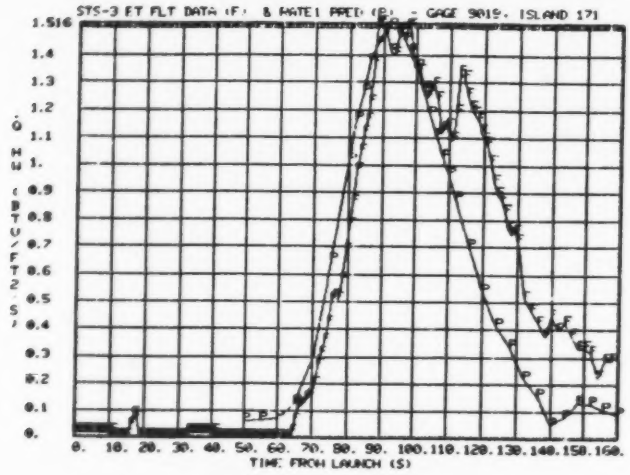


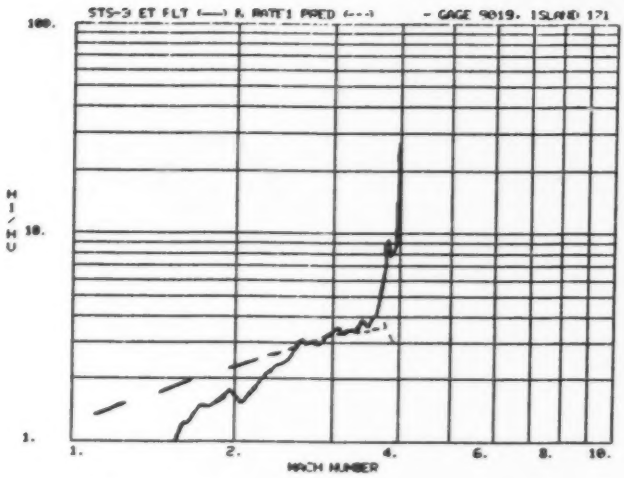
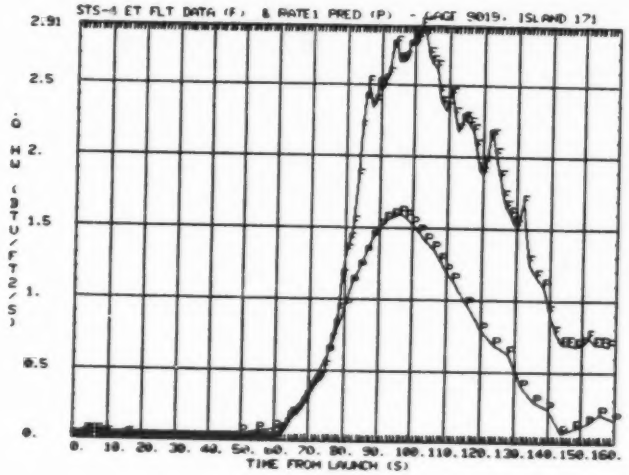


Fig. A.14c Aerothermal Analysis for Gage 9019 in STS-3



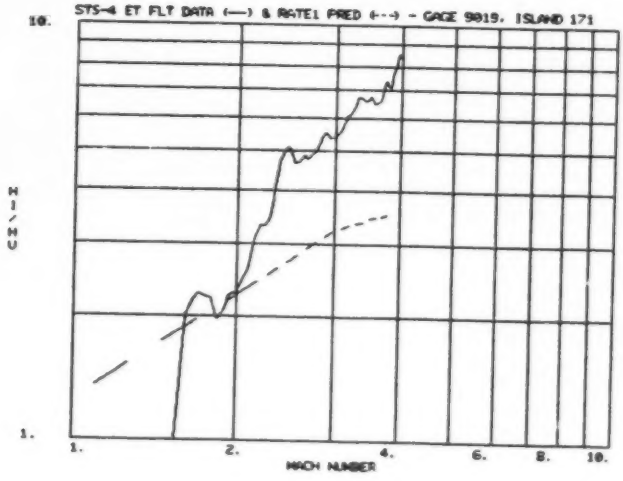
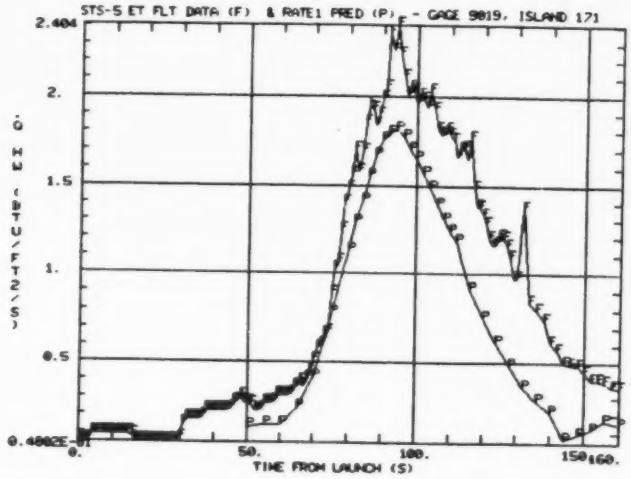


Fig. A.14d Aerothermal Analysis for Gage 9019 in STS-4



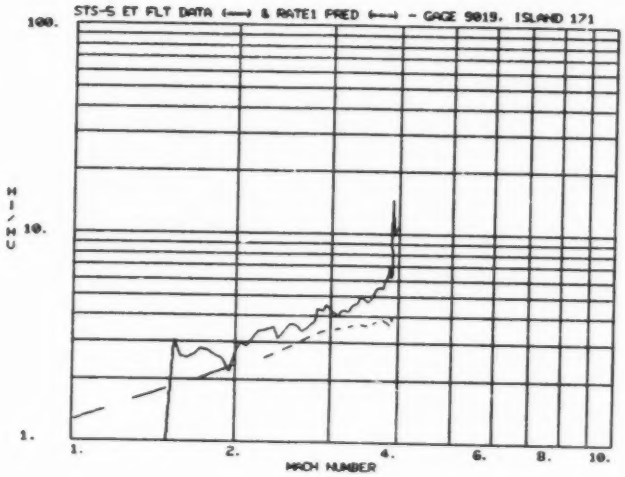
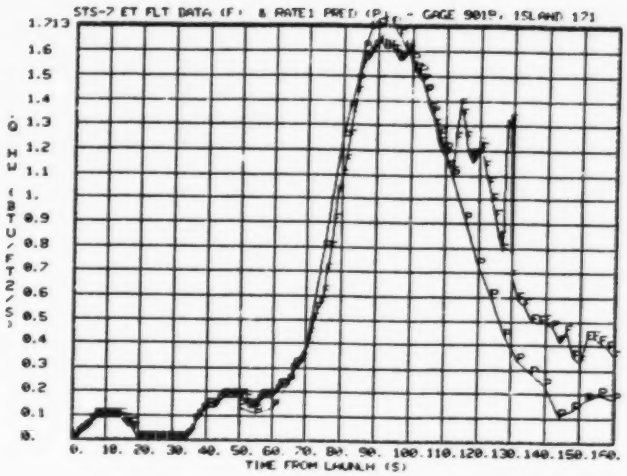


Fig. A.14e Aerothermal Analysis for Gage 9019 in STS-5



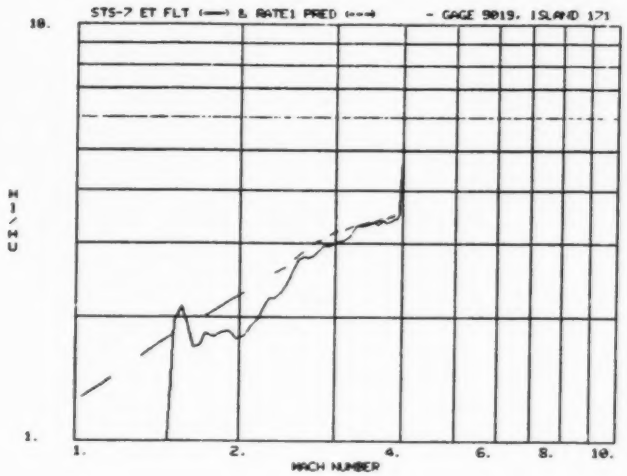
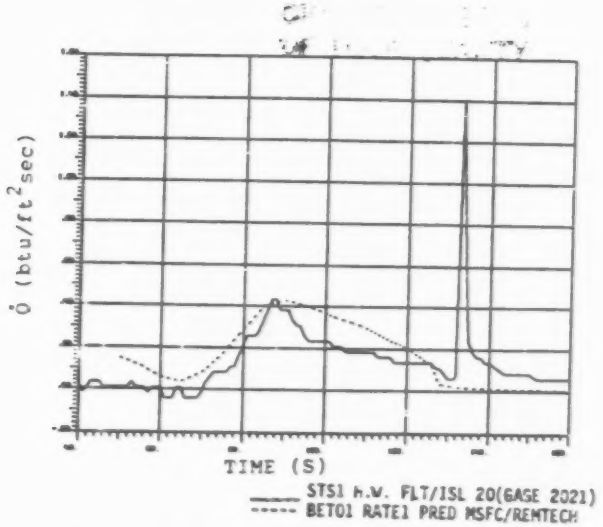


Fig. A.14f Aerothermal Analysis for Gage 9019 In STS-7



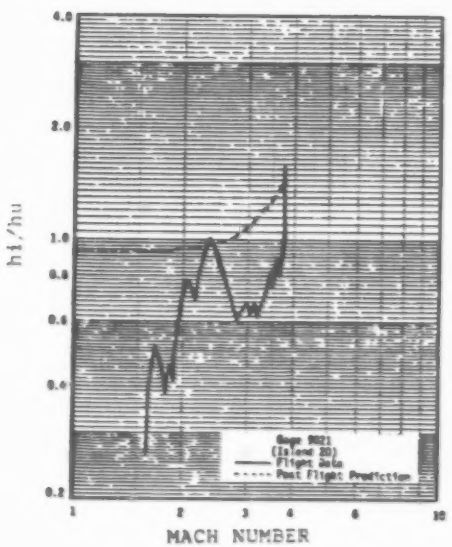
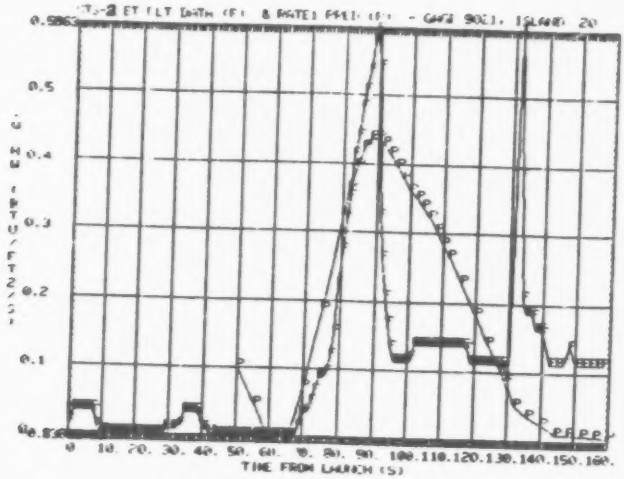


Fig. A.15a Aerothermal Analysis for Gage 9021 in STS-1



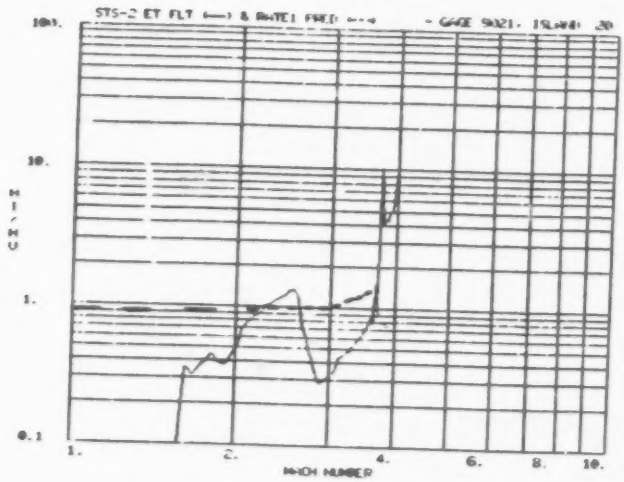


Fig. A.15b Aerothermal Analysis for Gage 9021 in STS-2

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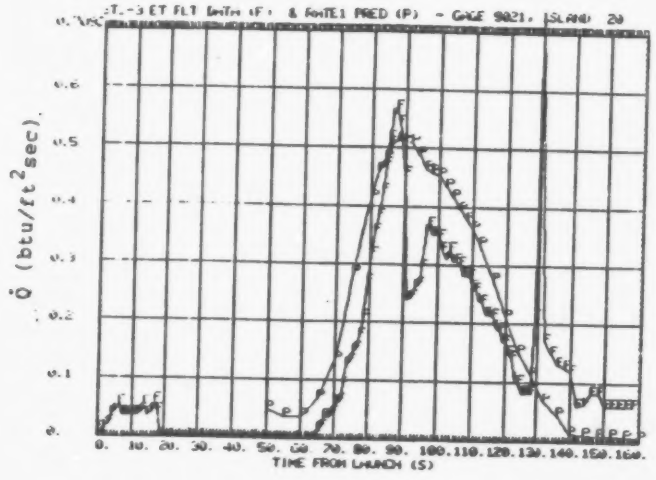

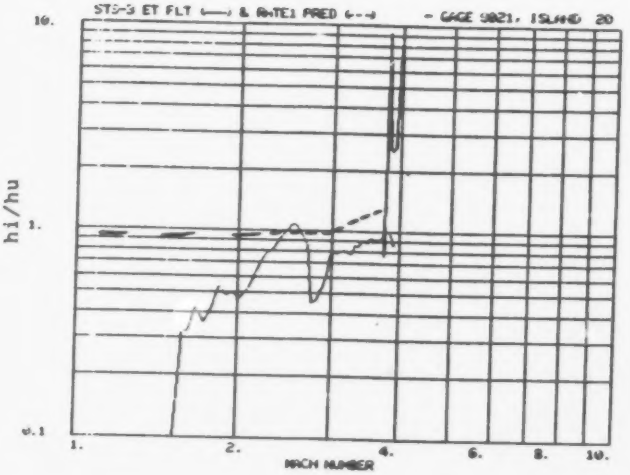

Fig. A.15c Aerothermal Analysis for Gage 9021 in STS-3

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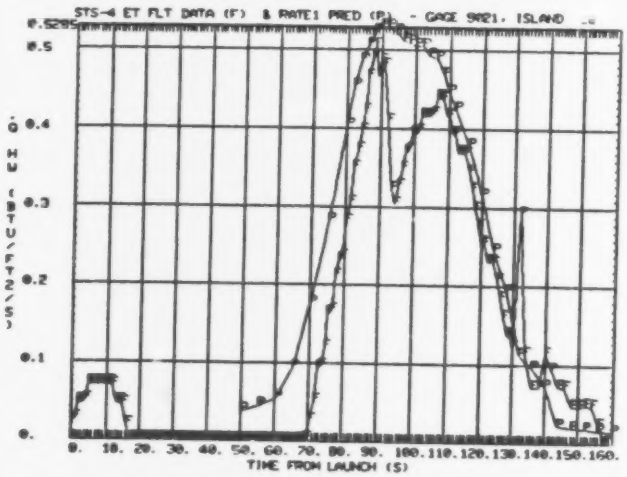

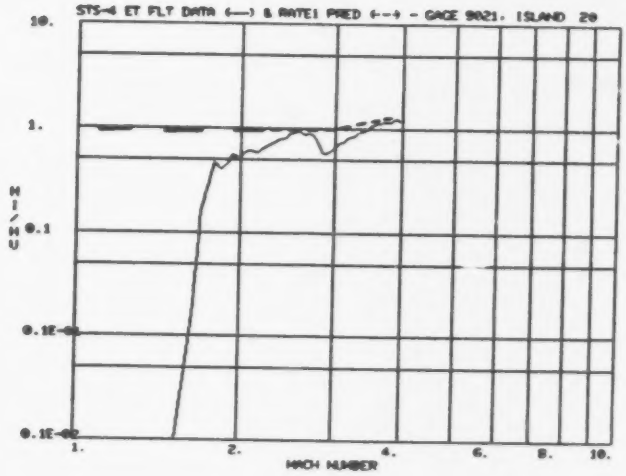

Fig. A.15d Aerothermal Analysis for Gage 9021 in STS-4

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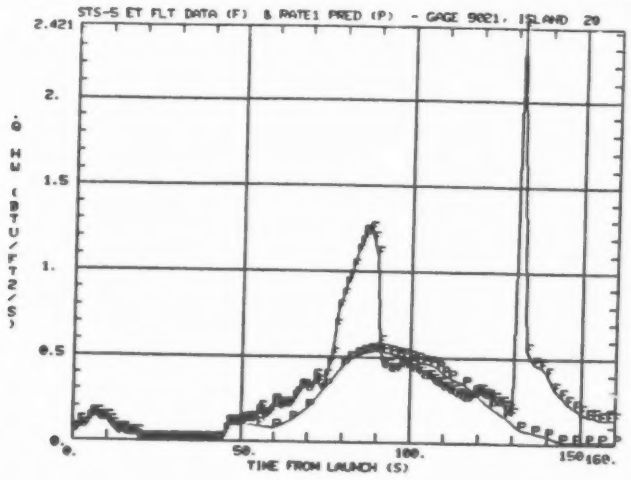

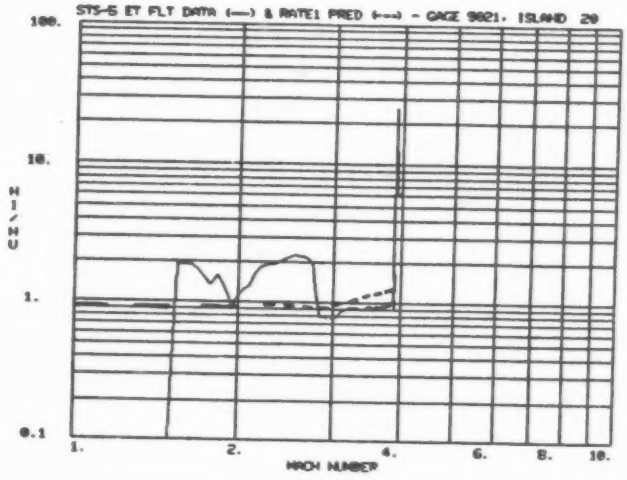

Fig. A.15e Aerothermal Analysis for Gage 9021 in STS-5

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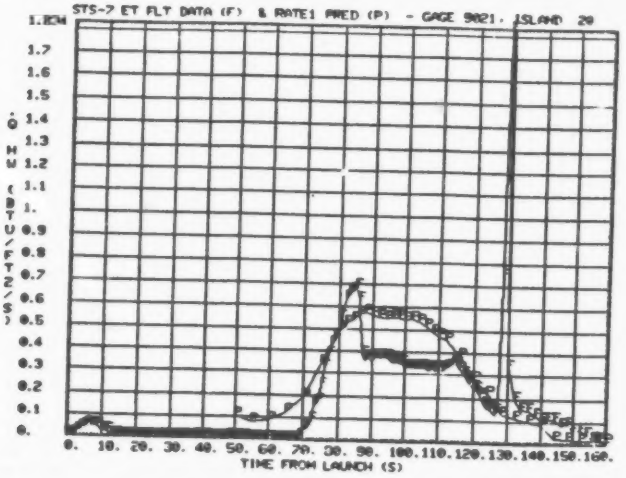

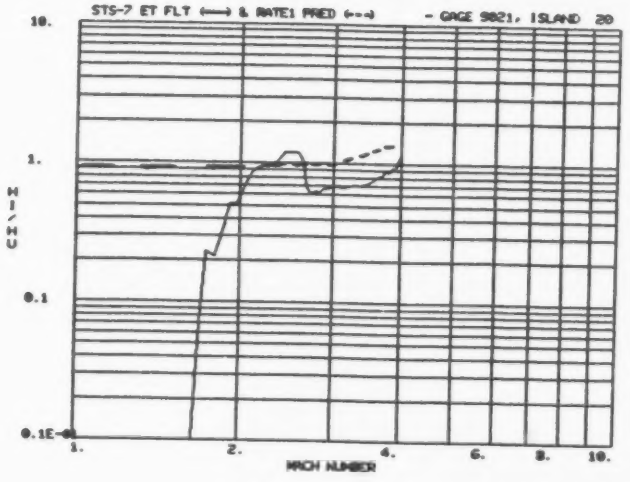

Fig. A.15f Aerothermal Analysis for Gage 9021 in STS-7

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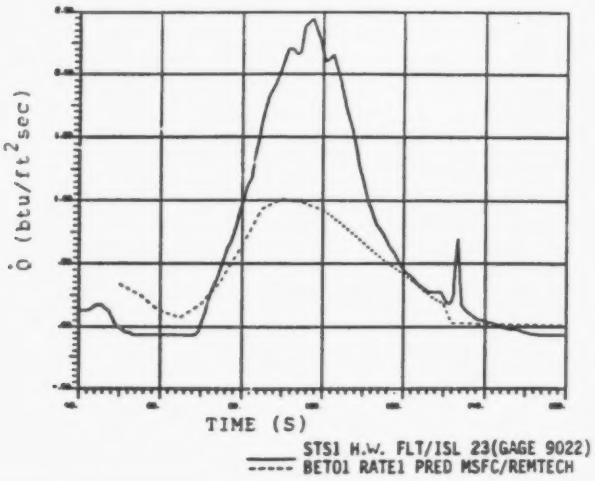
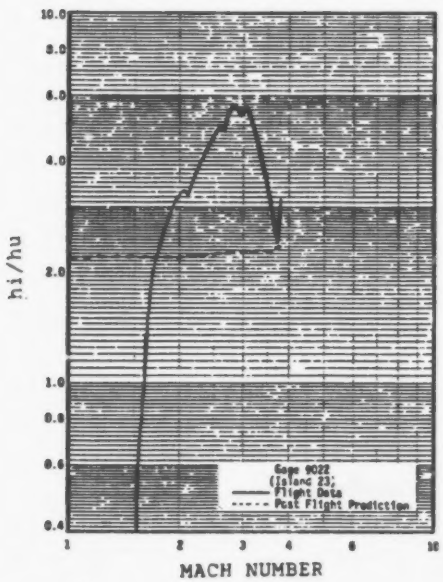
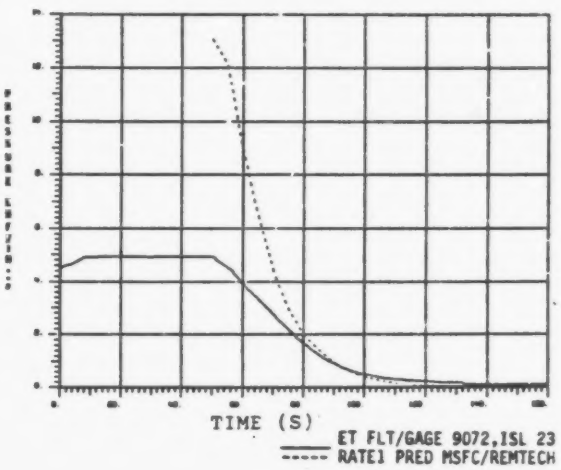
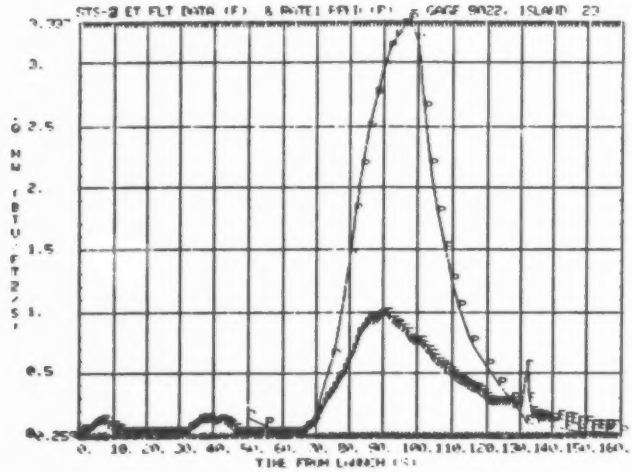


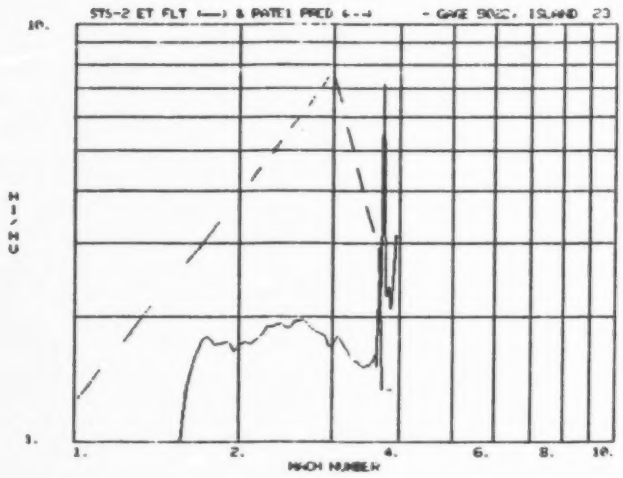




NOTE:
- Bad Pressure Measurements

Fig. A.16a Aerothermal Analysis for Gage 9022 in STS-1





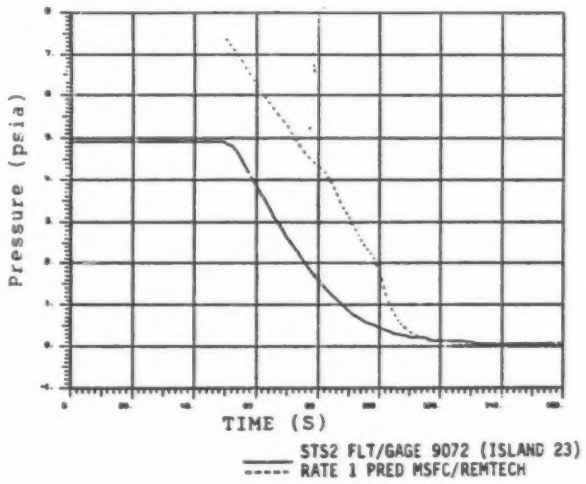
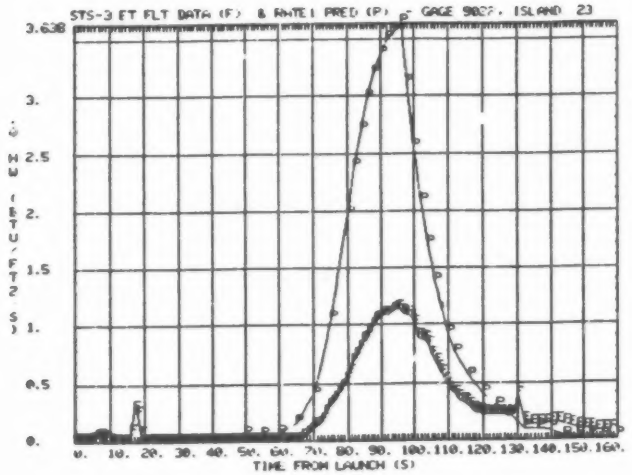
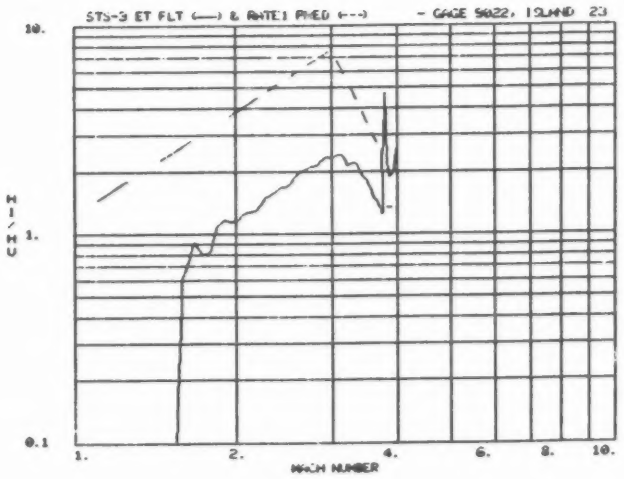


Fig. A.16b Aerothermal Analysis for Gage 9022 in STS-2





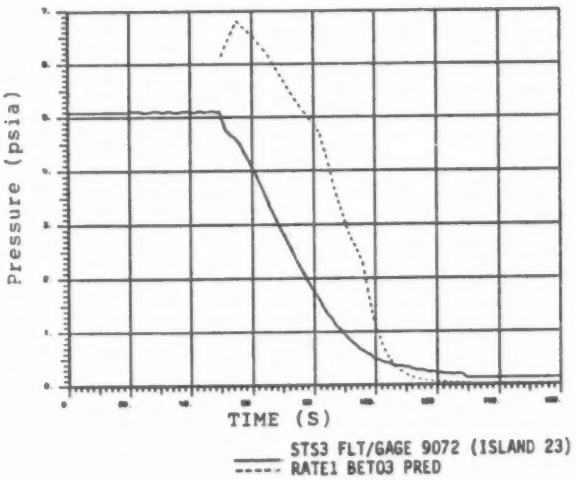


Fig. A.16c Aerothermal Analysis for Gage 9022 in STS-3

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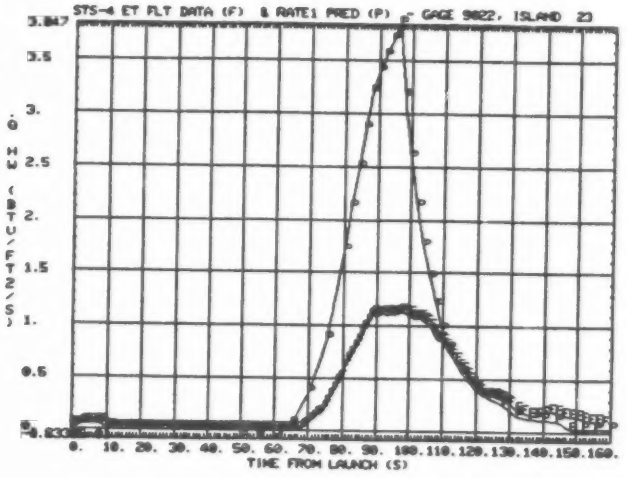
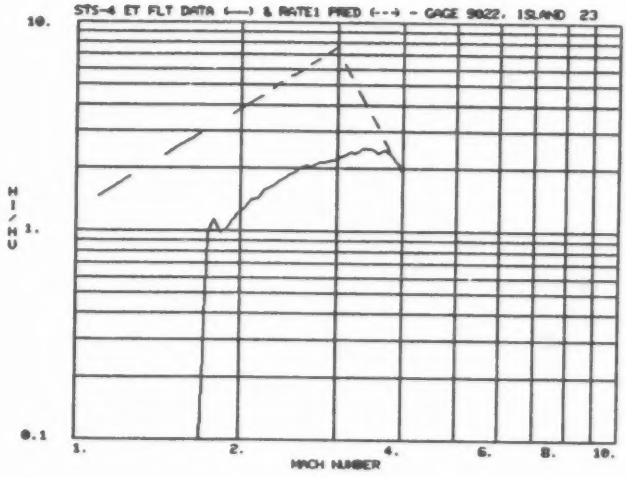




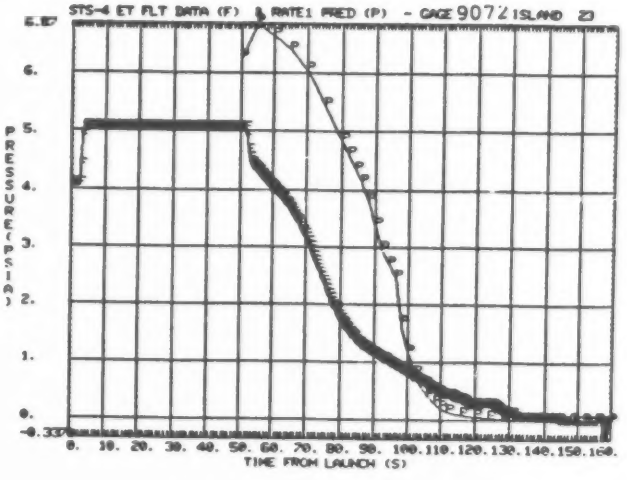
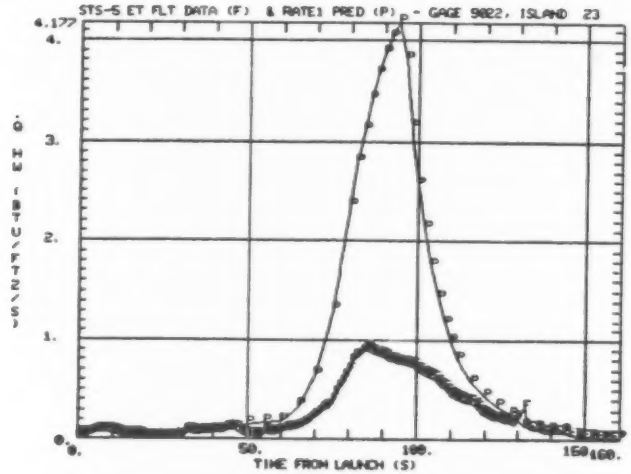
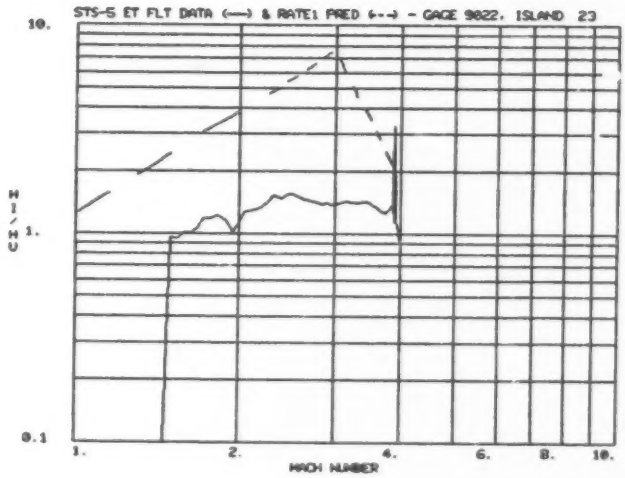


Fig. A.16d Aerothermal Analysis for Gage 9022 in STS-4





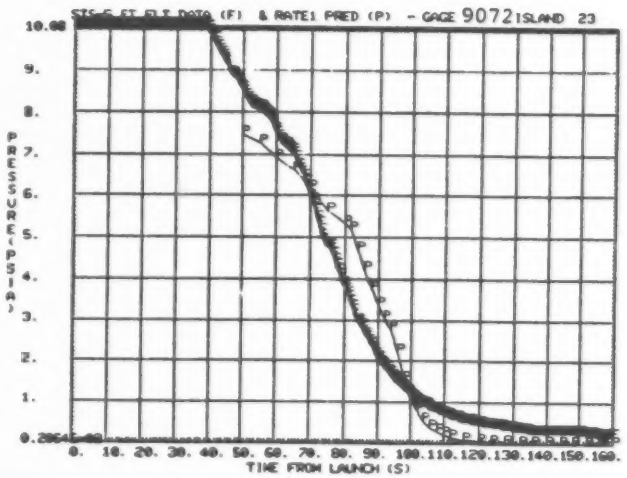


Fig. A.16e Aerothermal Analysis for Gage 9022 in STS-5

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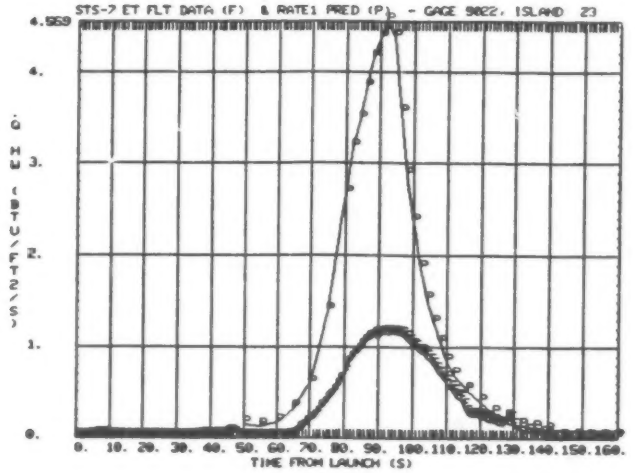
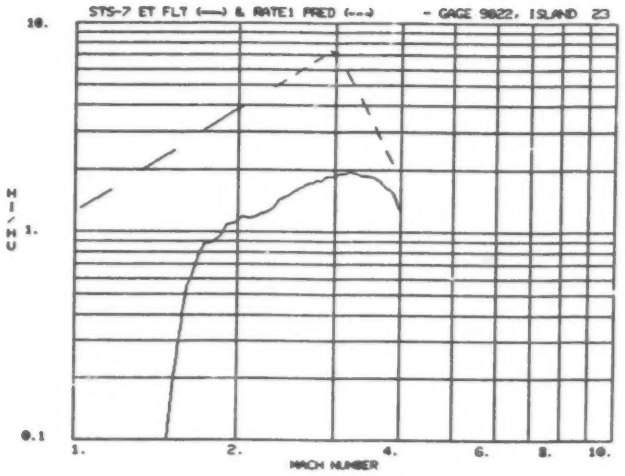




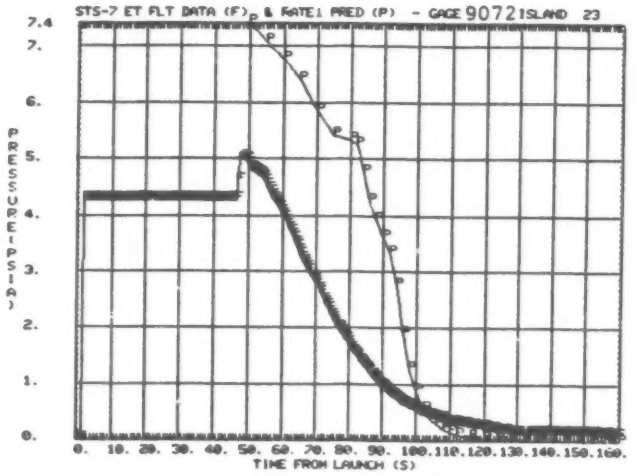
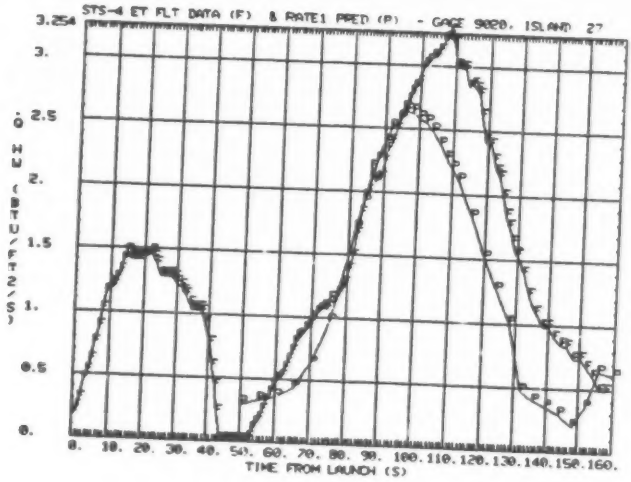


Fig. A.16f Aerothermal Analysis for Gage 9022 in STS-7



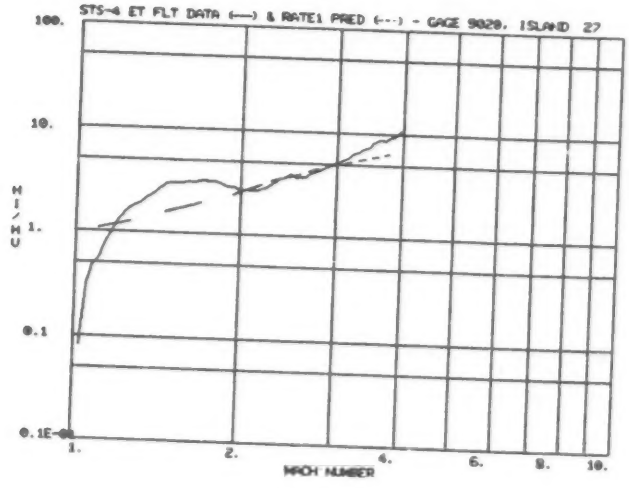


Fig. A.17a Aerothermal Analysis for Gage 9020 in STS-4

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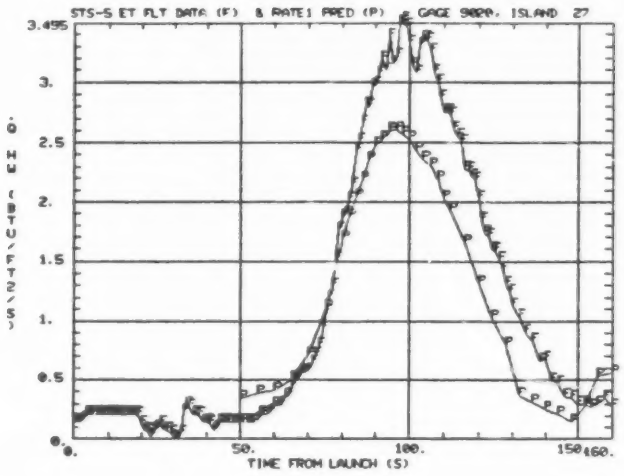

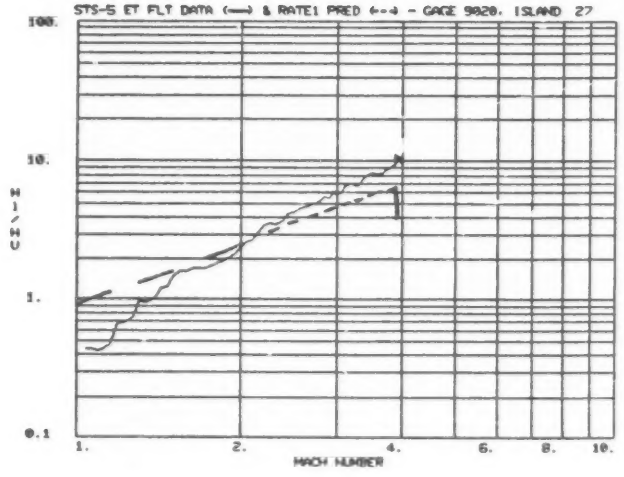

Fig. A.17b Aerothermal Analysis for Gage 9020 in STS-5

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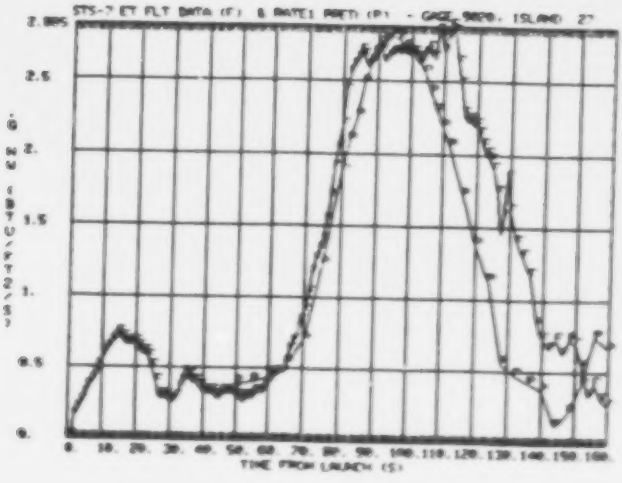

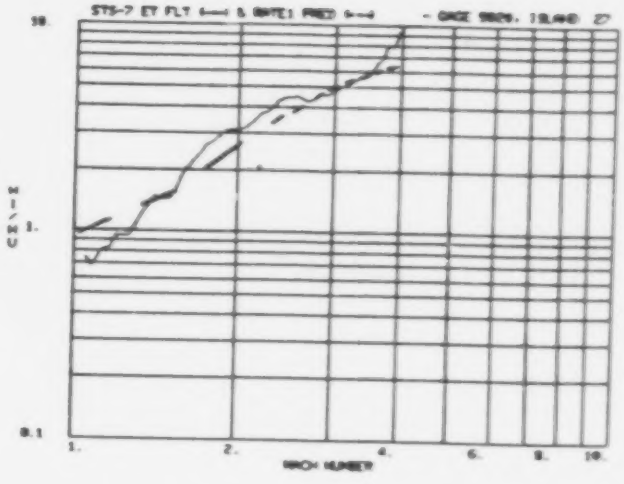

Fig. A.17c Aerothermal Analysis for Gage 9020 in STS-7

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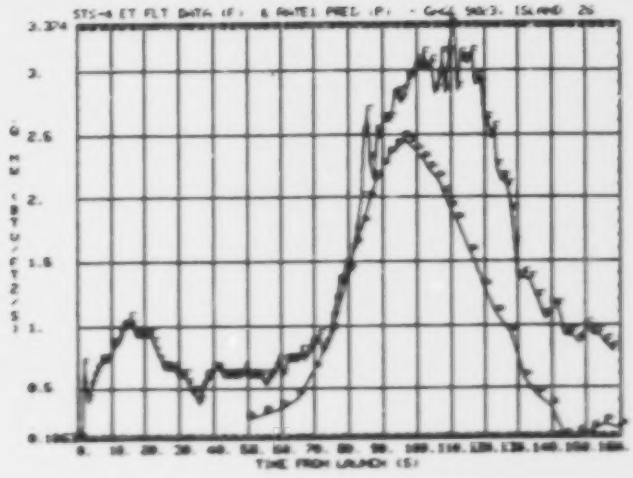


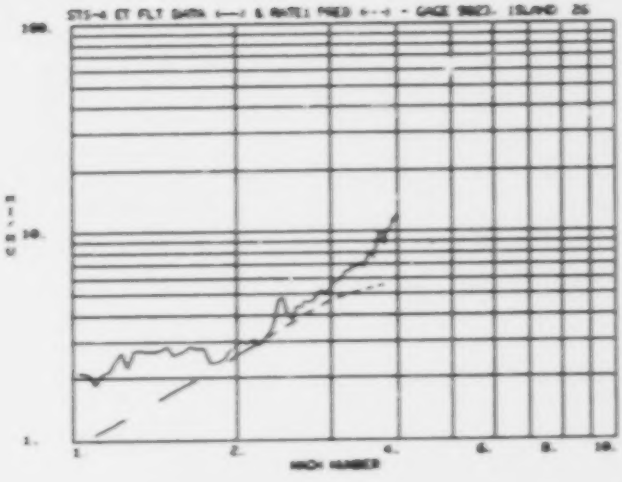
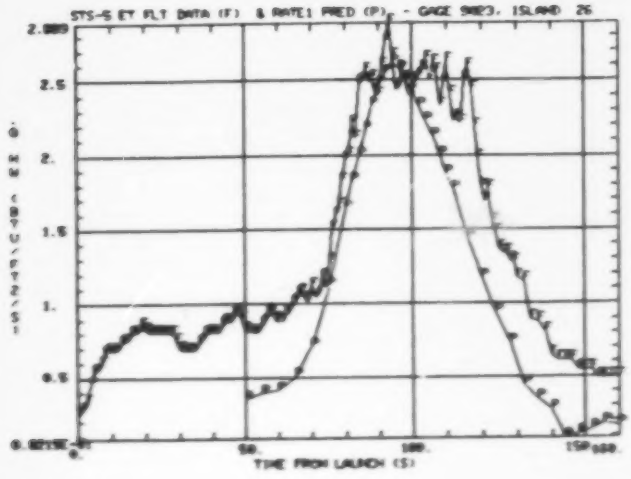


Fig. A.18a Aerothermal Analysis for GAge 9023 in STS-4



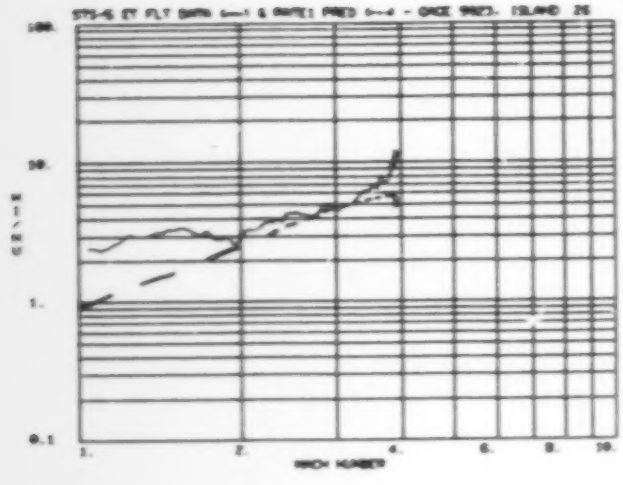
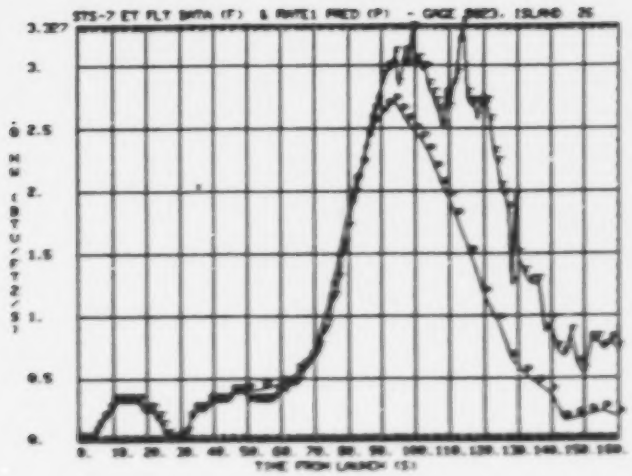


Fig. A.18b Aerothermal Analysis for GAge 9023 in STS-5



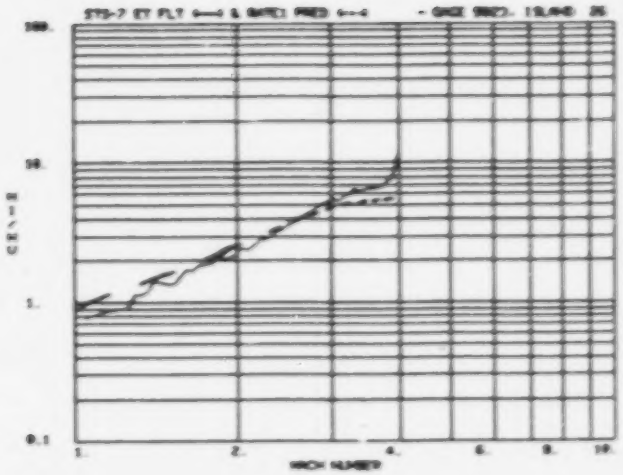


Fig. A.18c Aerothermal Analysis for Gage 9023 in STS-7

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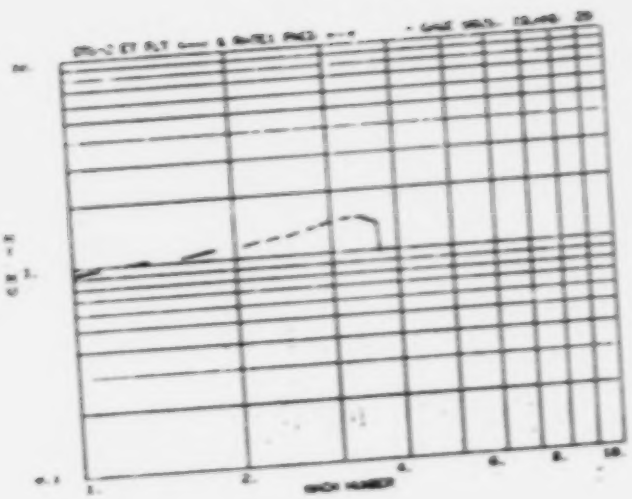
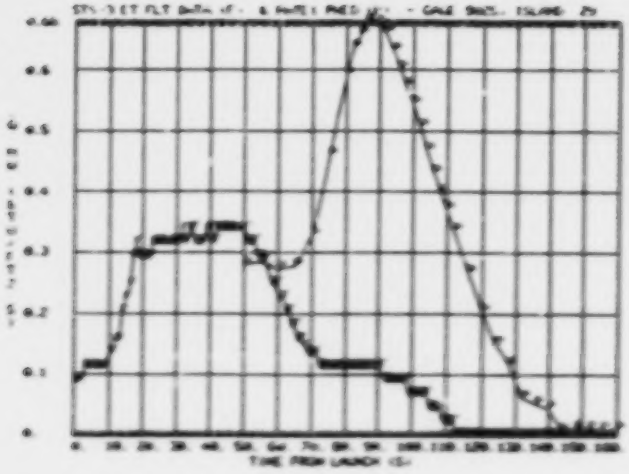
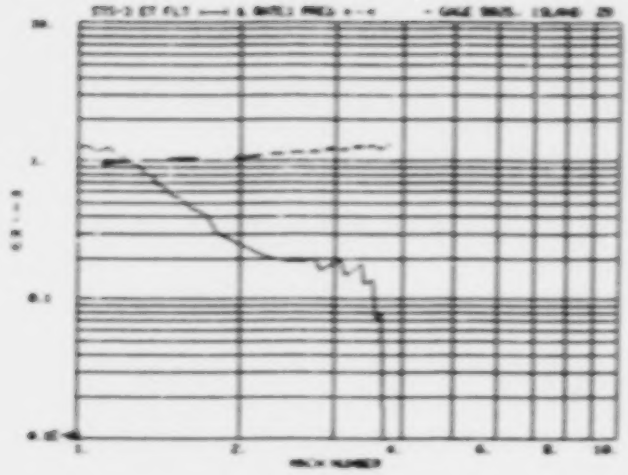


NOTE:
- Bad Heating Rate Measurements

Fig. A.19a Aerothermal Analysis for Gage 9025 in STS-2





NOTE:
- Bad Heating Rate Measurements

Fig. A.19b Aerothermal Analysis for Gage 9025 in STS-3

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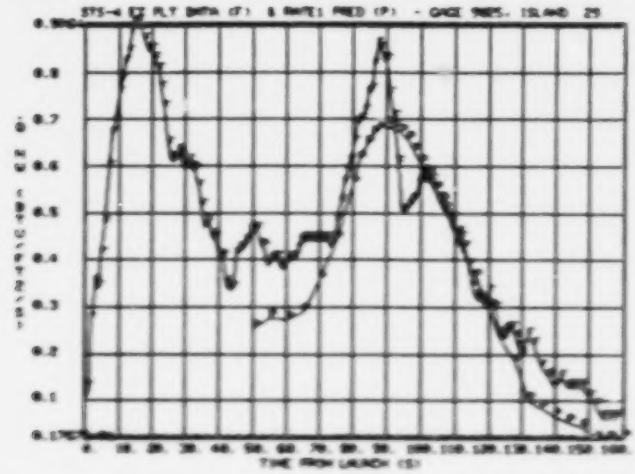


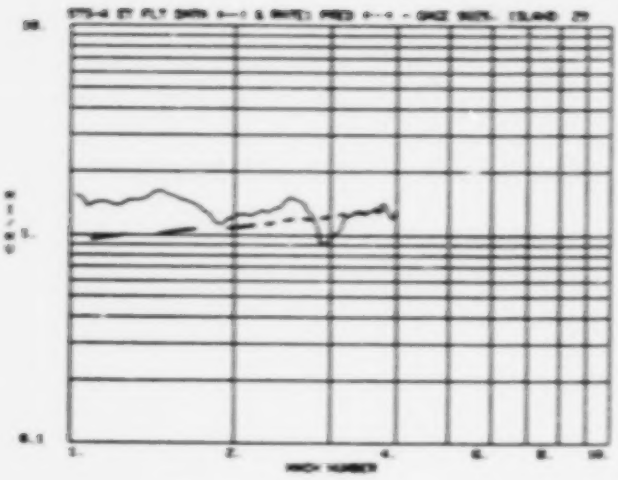
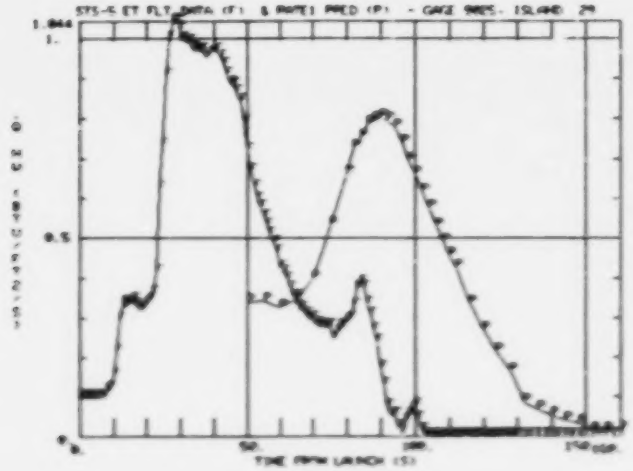
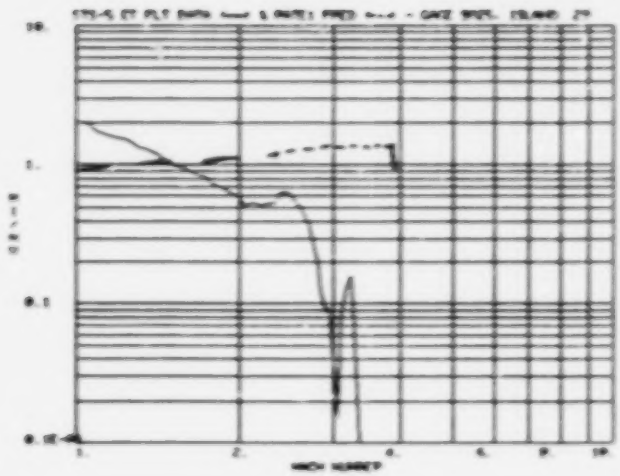


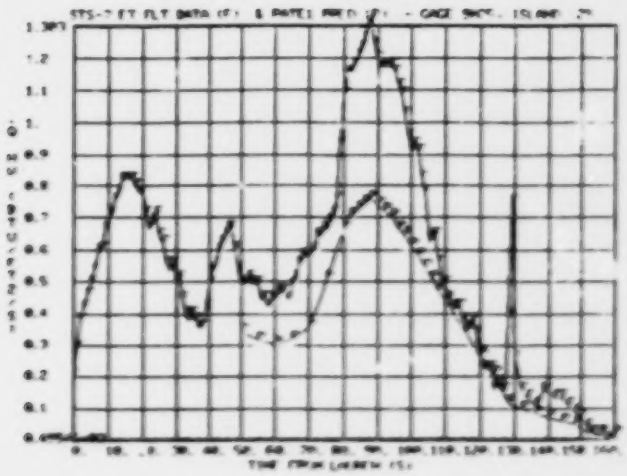
Fig. A.19c Aerothermal Analysis for Gage 9025 in STS-4





NOTE:
- Bad Heating Rate Measurements

Fig. A.19d Aerothermal Analysis for Gage 9025 in STS-5



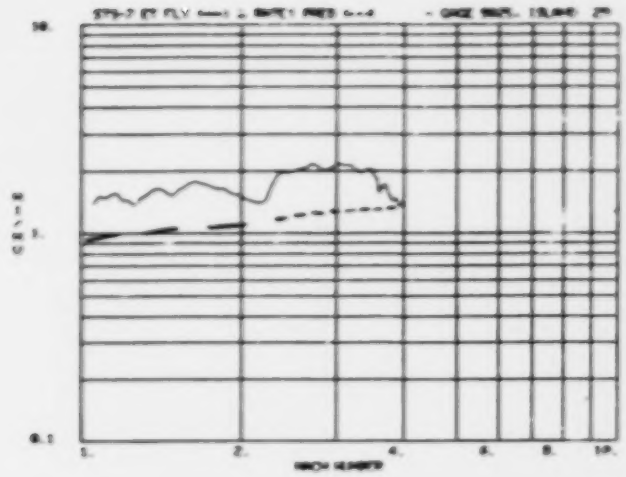


Fig. A.19e Aerothermal Analysis for Gage 9025 in STS-7

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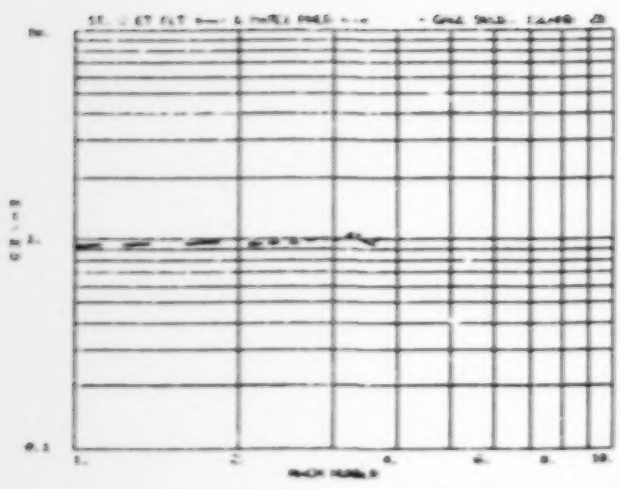
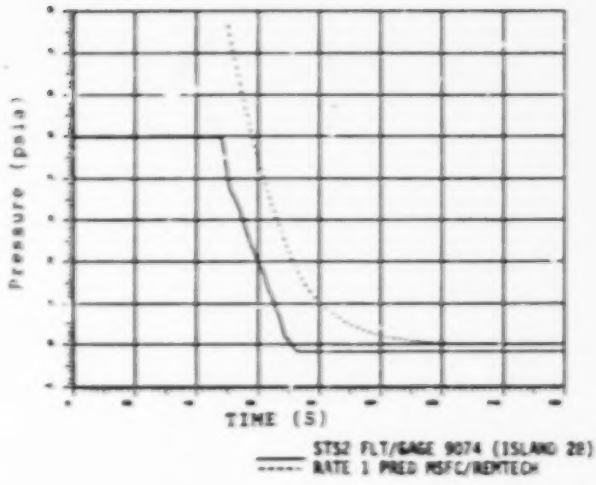
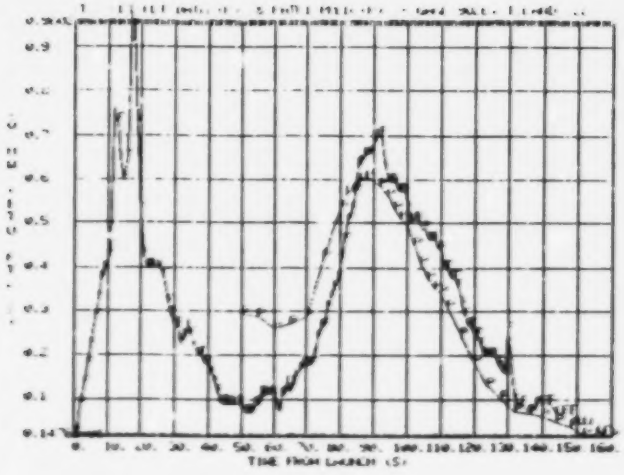
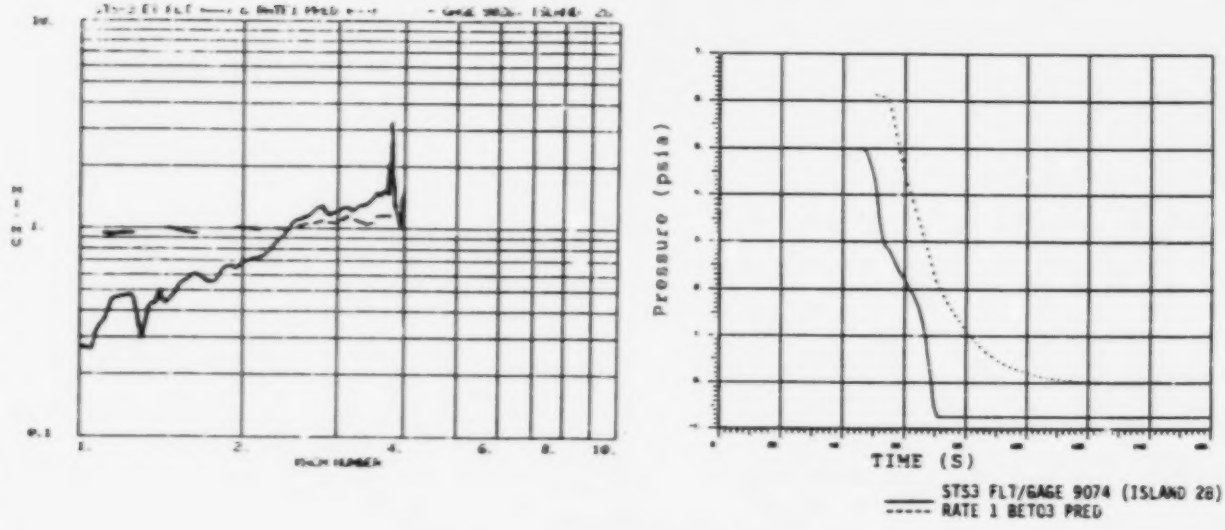




NOTE:
- Bad Pressure Measurements
- Bad Heating Rate Measurements

Fig. A.20a Aerothermal Analysis for Gage 9026 in STS-2





NOTE:
- Bad Pressure Measurements

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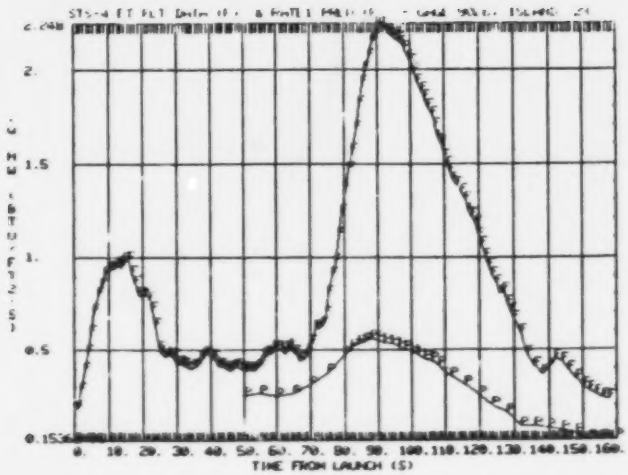
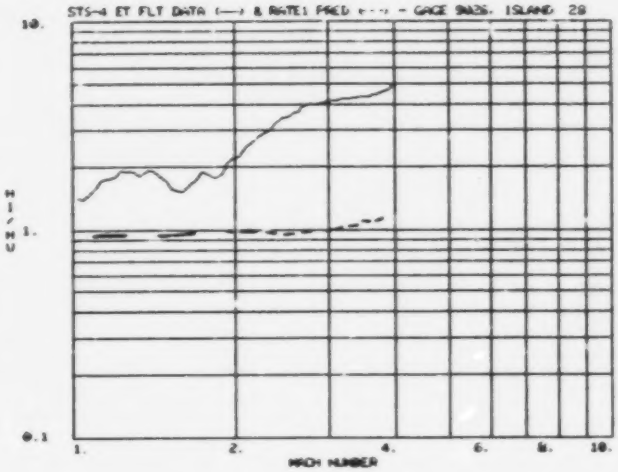
Fig. A.20b Aerothermal Analysis for Gage 9026 in STS-3





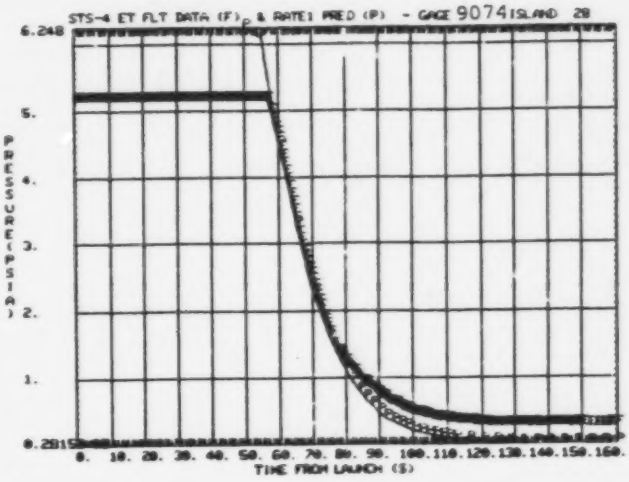
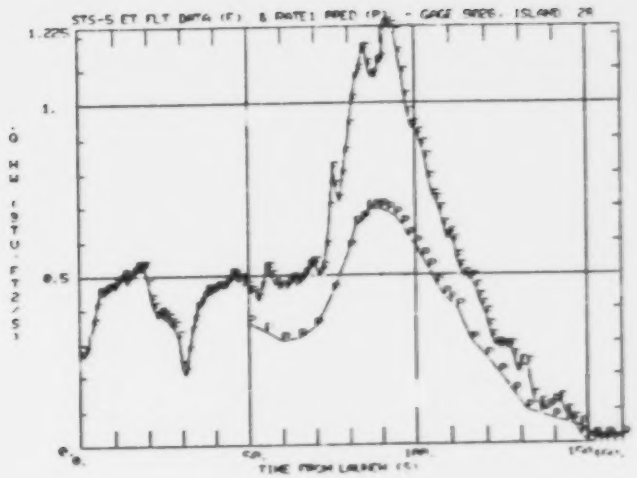
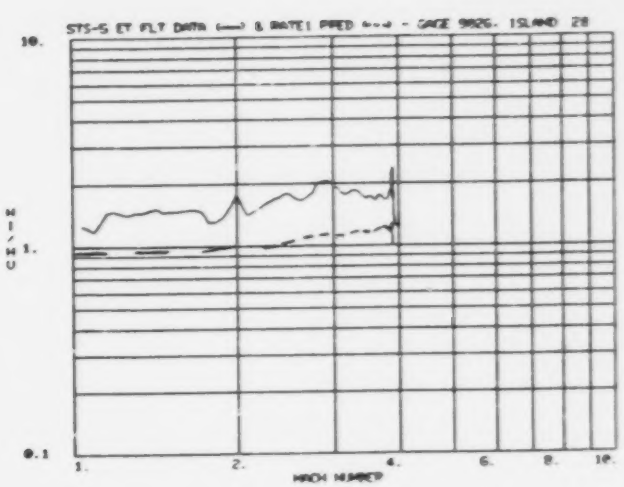


Fig. A.20c Aerothermal Analysis for Gage 9026 in STS-4





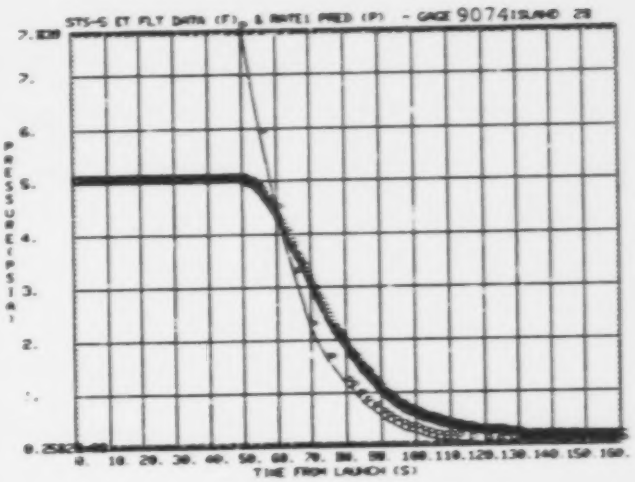
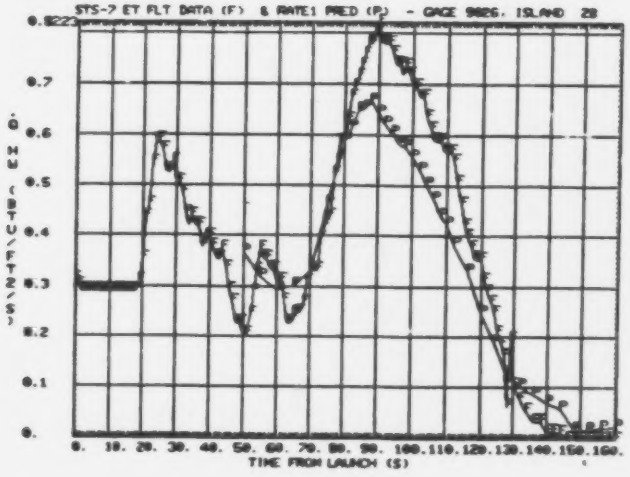


Fig. A.20d Aerothermal Analysis for GAge 9026 in STS-5



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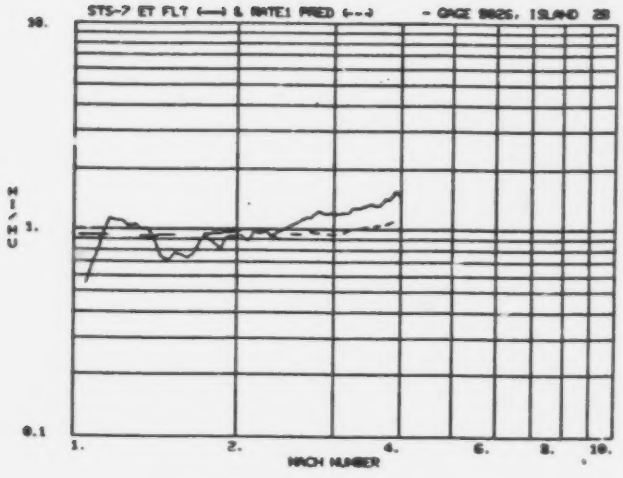


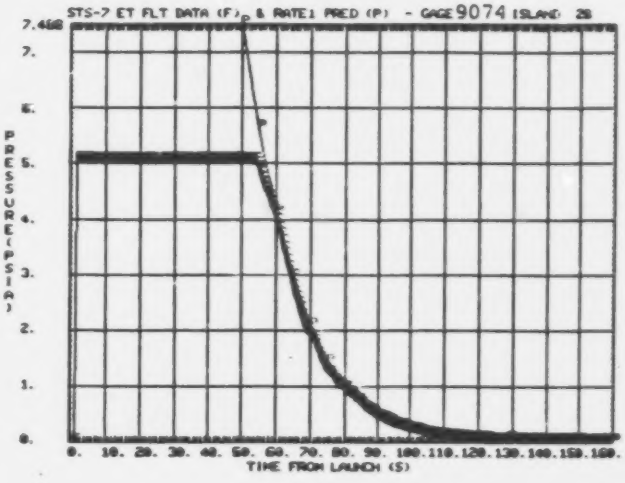
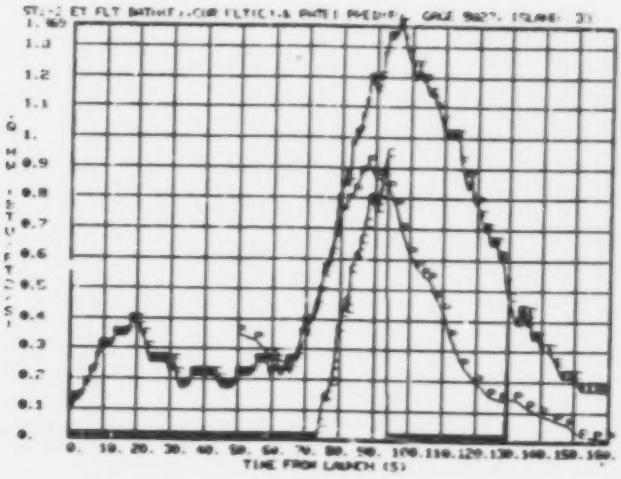
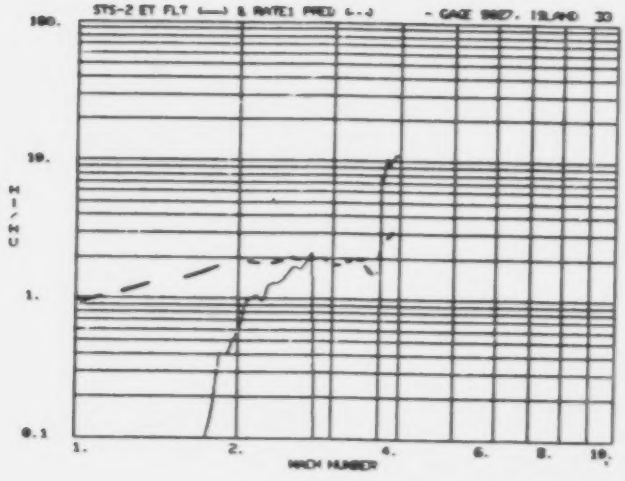


Fig. A.20e Aerothermal Analysis for Gage 9026 in STS-7





NOTE:
- Plume-Induced Heating was Considered

Fig. A.21a Aerothermal Analysis for Gage 9027 in STS-2

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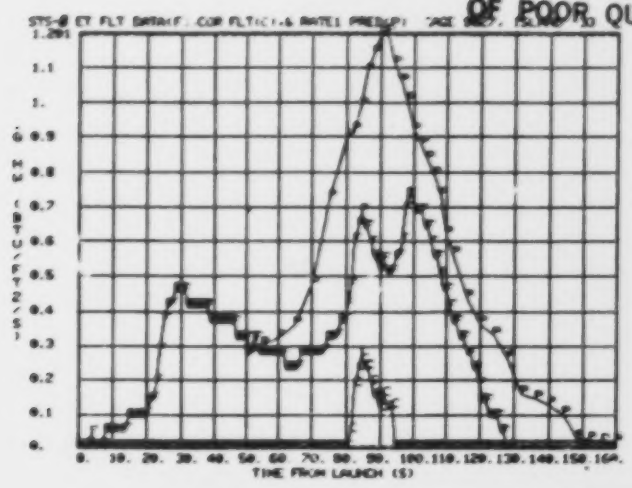

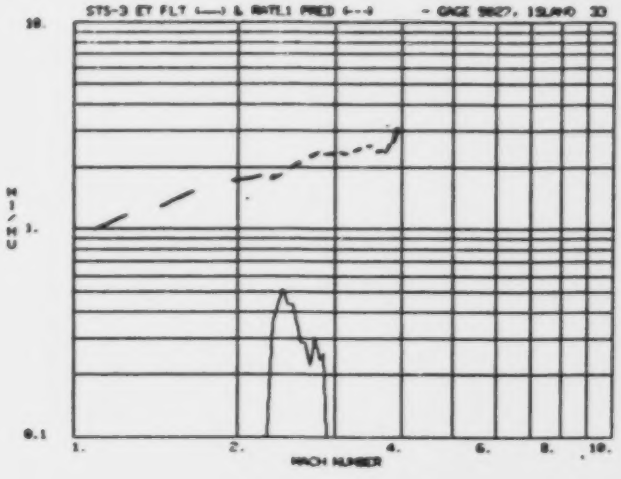

NOTE:
- Plume-Induced Heating was Considered

Fig. A.21b Aerothermal Analysis for Gage 9027 in STS-3

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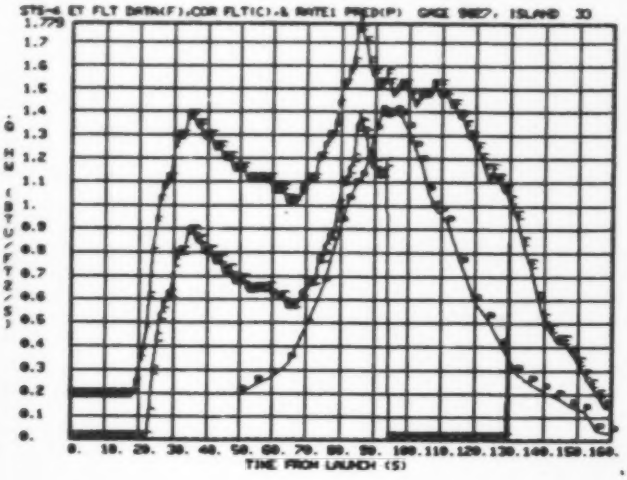

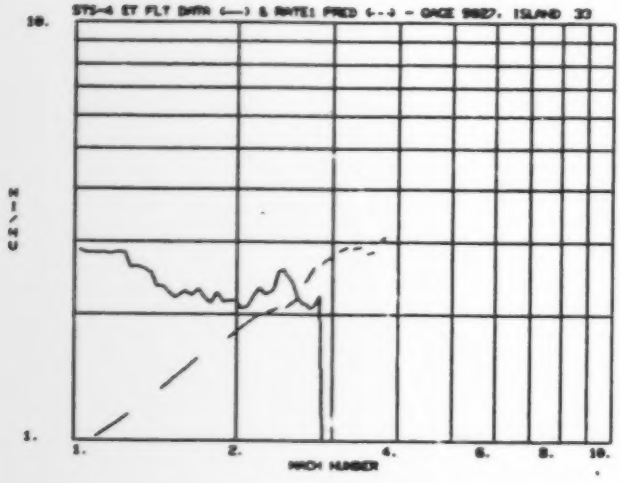

NOTE:
- Plume-Induced Heating was Considered

Fig. A.21c Aerothermal Analysis for GAge 9027 in STS-4

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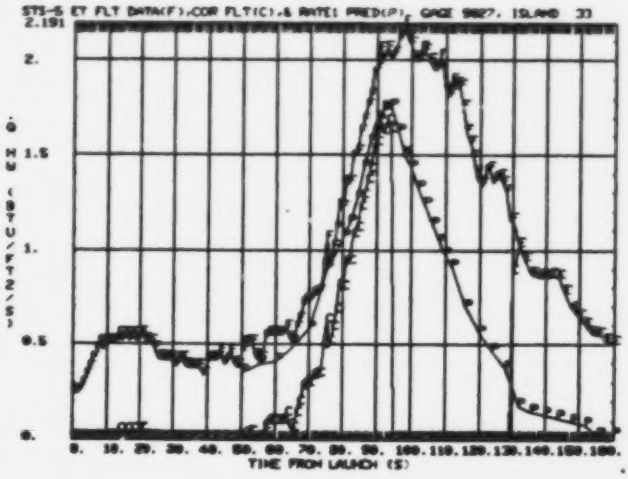
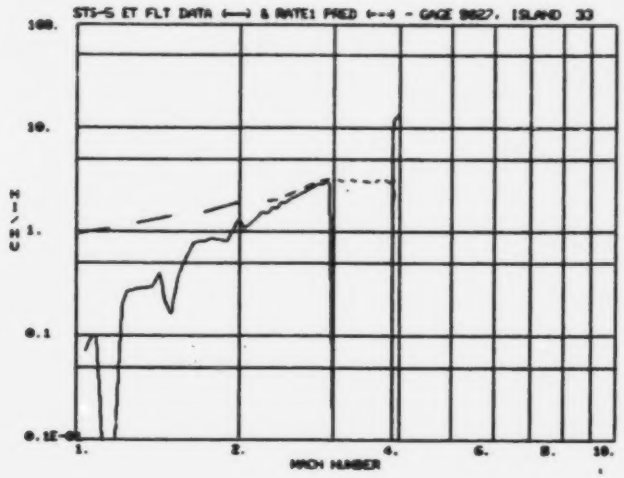
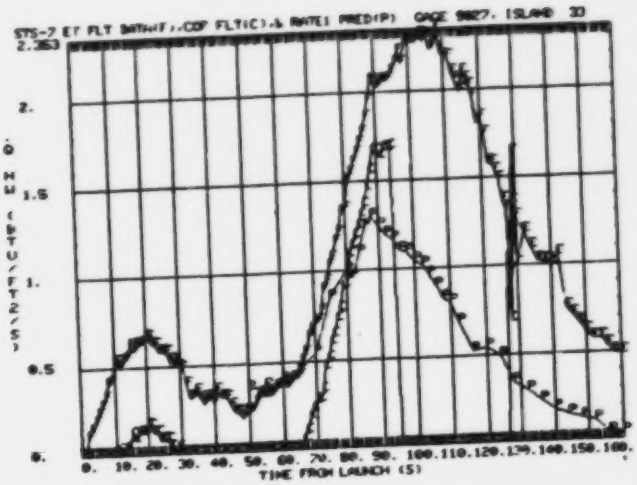
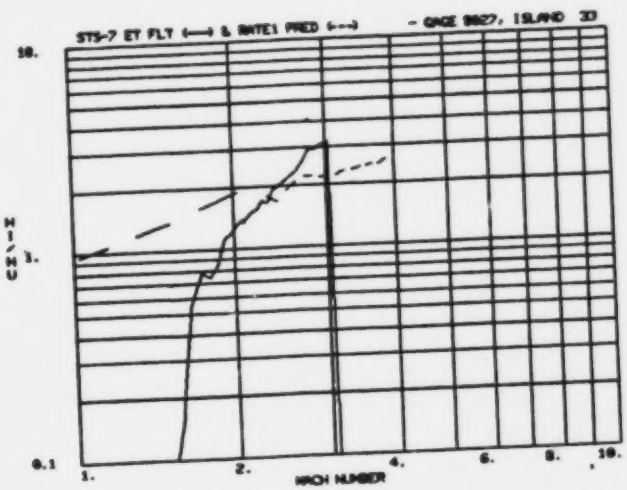




NOTE:
- Plume-Induced Heating was Considered

Fig. A.21d Aerothermal Analysis for Gage 9027 in STS-5





NOTE:
- Plume-Induced Heating was Considered

Fig. A.21e Aerothermal Analysis for Gage 9027 in STS-7

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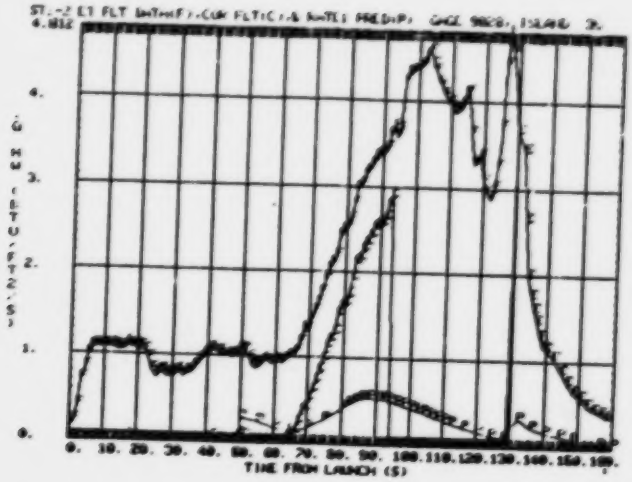

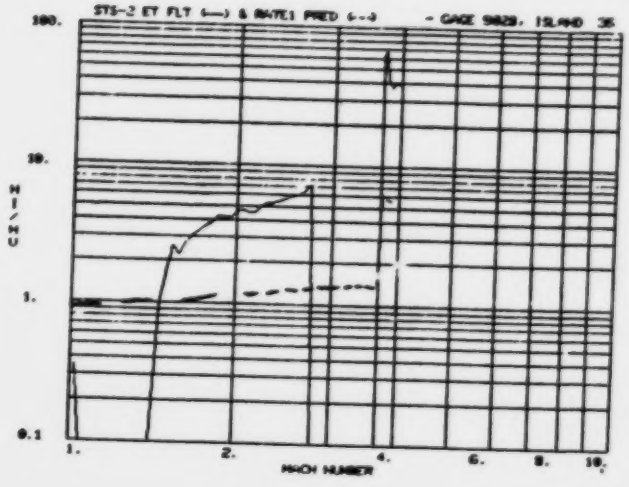

NOTE:
- Plume-Induced Heating was Considered

Fig. A.22a Aerothermal Analysis for Gage 9028 in STS-2

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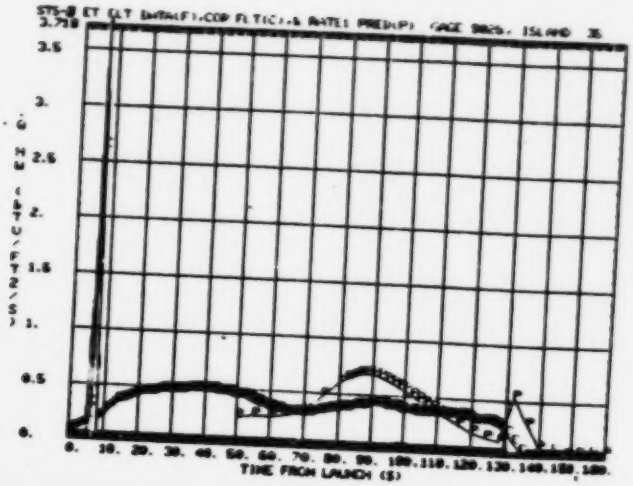

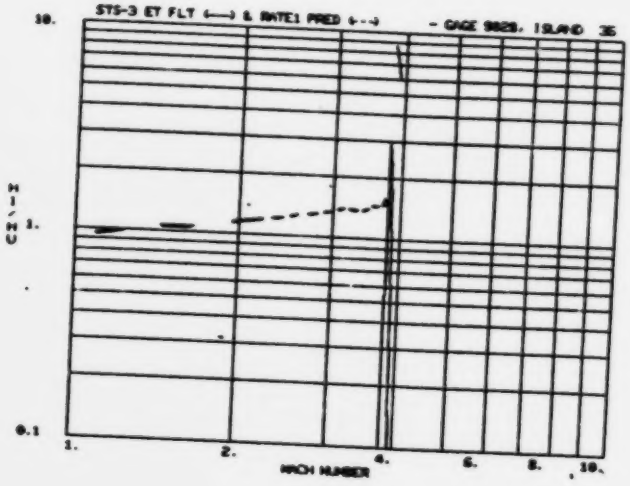

NOTE:
- Questionable Measurements

Fig. A.22b Aerothermal Analysis for Gage 9028 in STS-3

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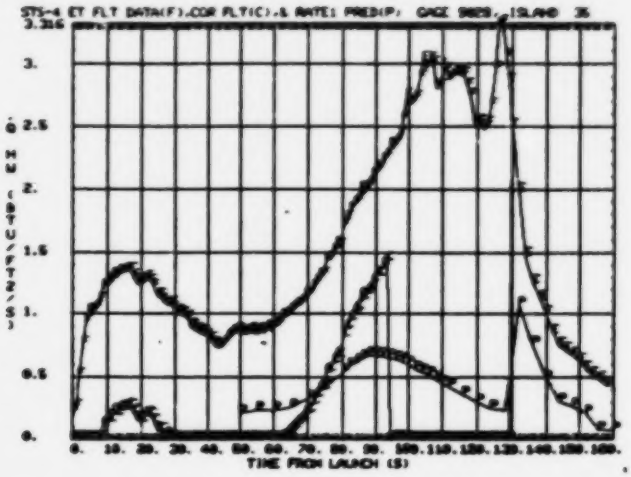
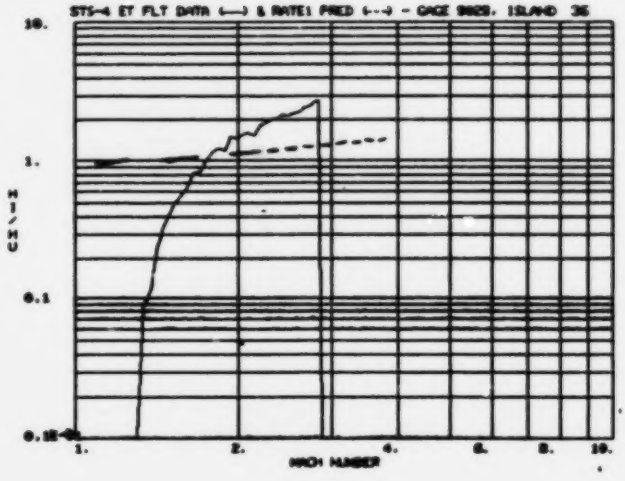
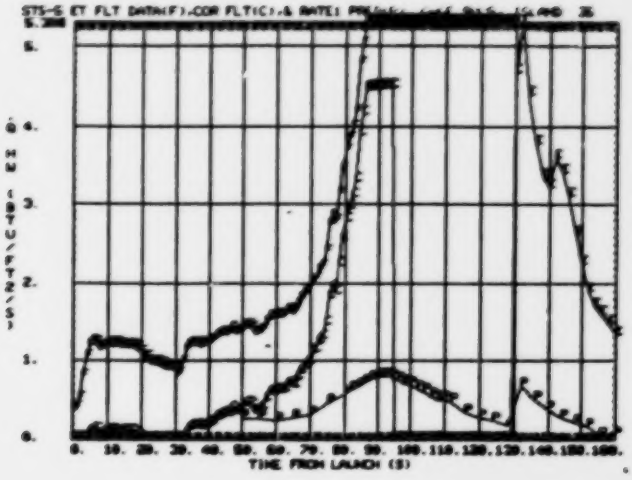
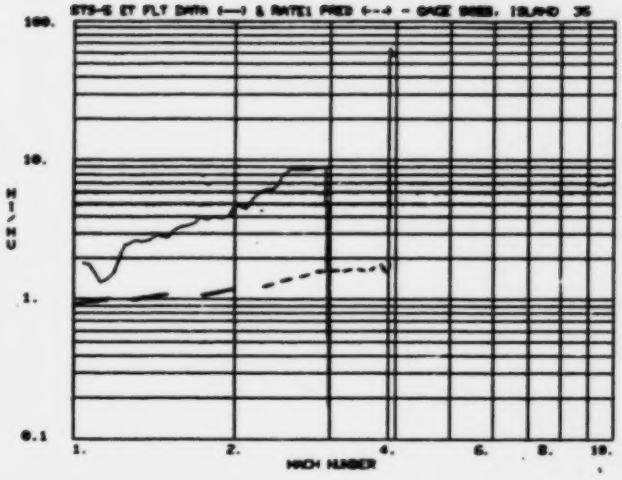




NOTE:
- Plume-Induced Heating was Considered

Fig. A.22c Aerothermal Analysis for Gage 9028 in STS-4





NOTE:
- Plume-Induced Heating was Considered

Fig. A.22d Aerothermal Analysis for Gage 9028 in STS-5

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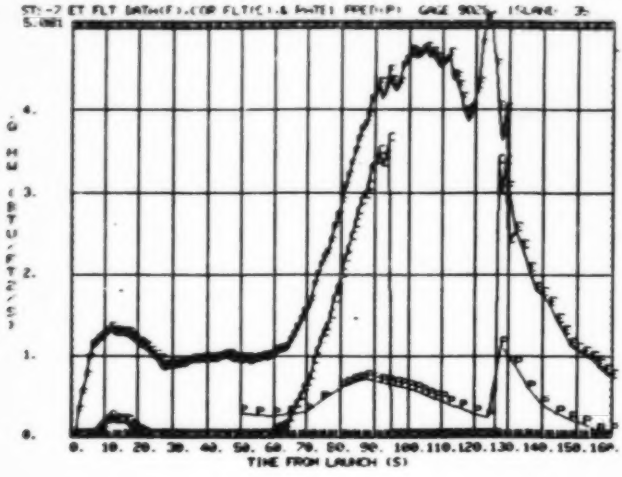

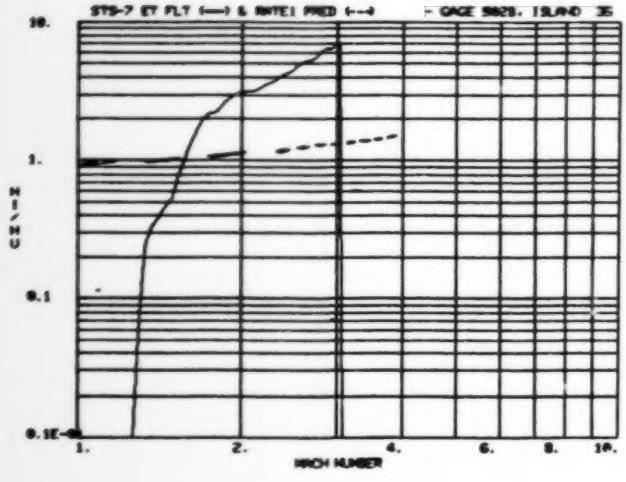

NOTE:
- Plume-Induced Heating was Considered

Fig. A.22e Aerothermal Analysis for Gage 9028 in STS-7

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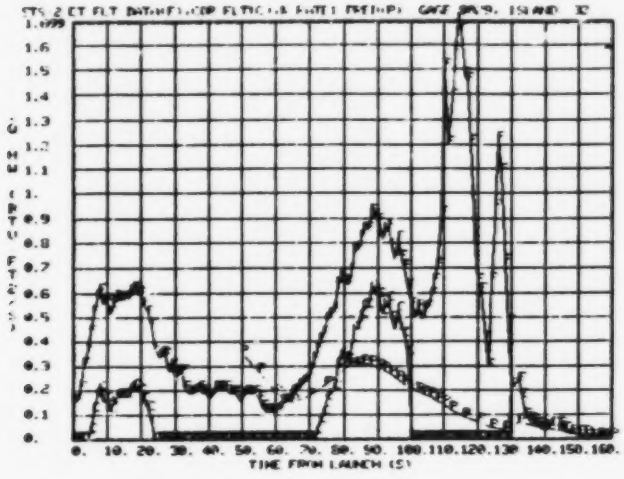

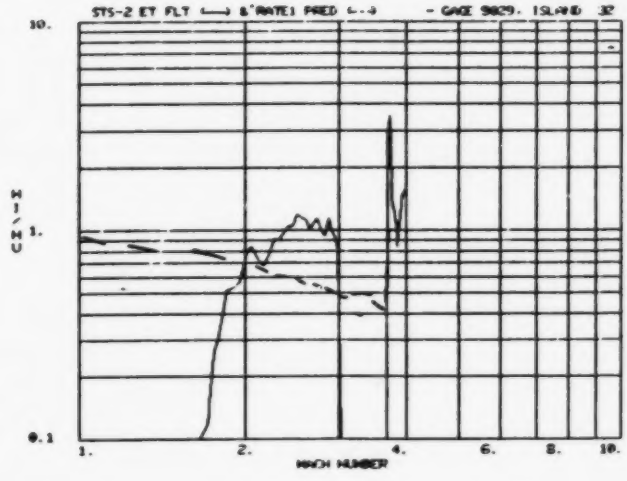

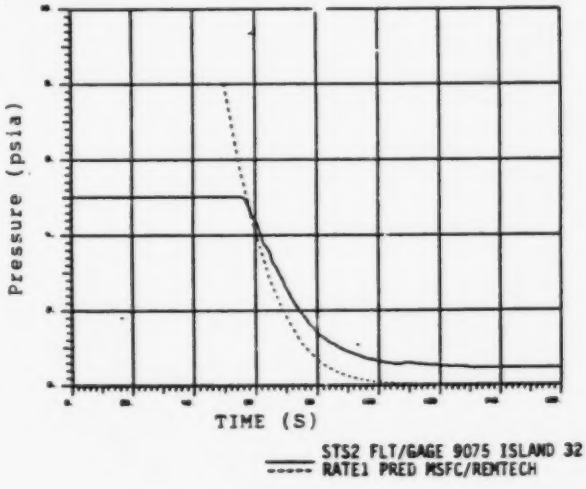

NOTE:
- Plume-Induced Heating was Considered

Fig. A.23a Aerothermal Analysis for Gage 9029 in STS-2

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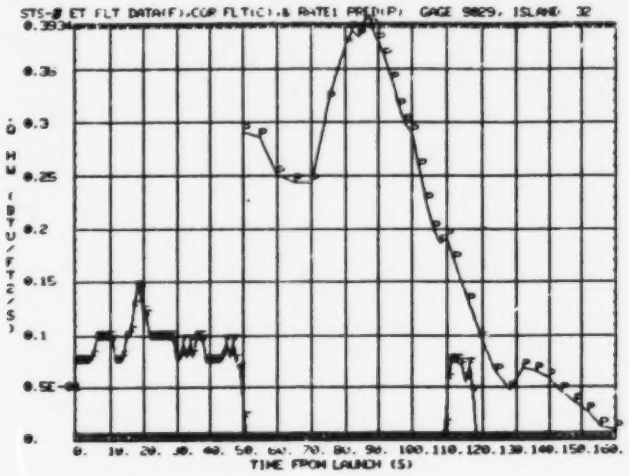

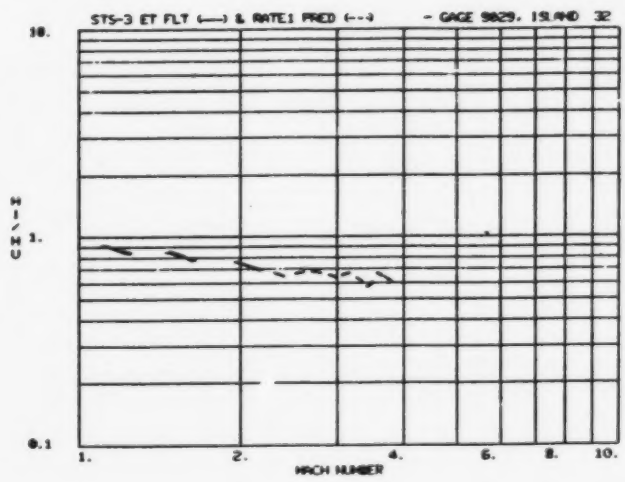

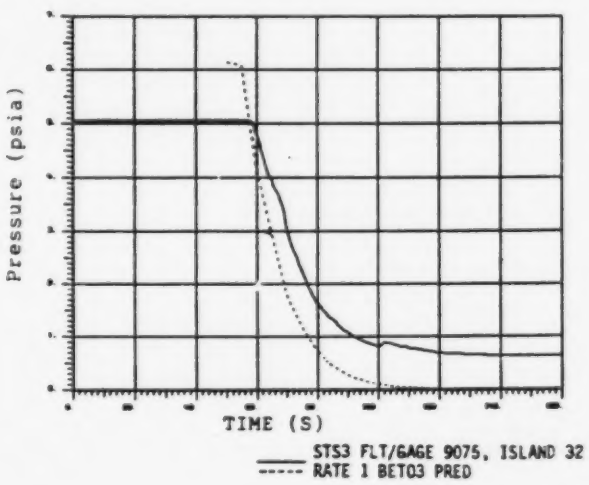

NOTE:
- Bad Heating Rate Measurements

Fig. A.23b Aerothermal Analysis for Gage 9029 in STS-3

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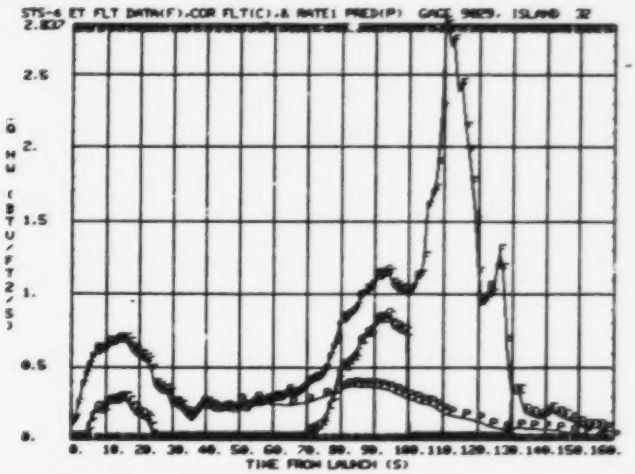

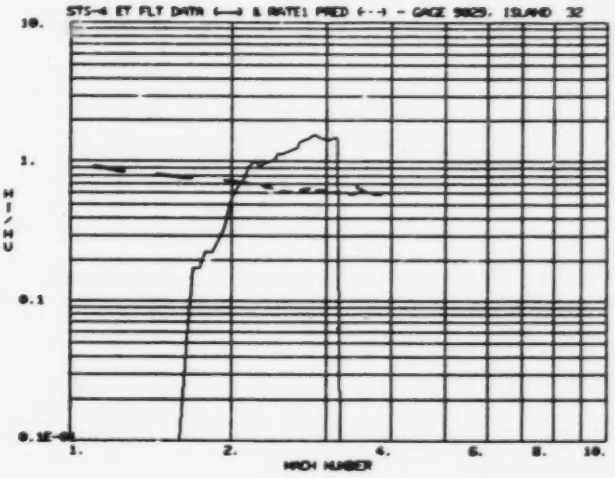

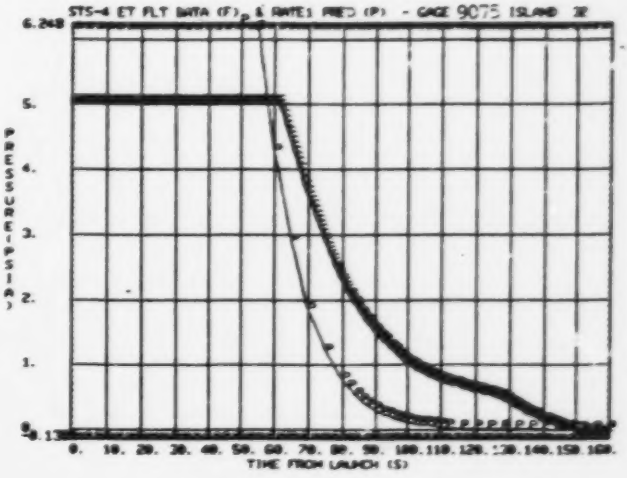

NOTE:
- Plume-Induced Heating was Considered

Fig. A.23c Aerothermal Analysis for Gage 9029 in STS-4

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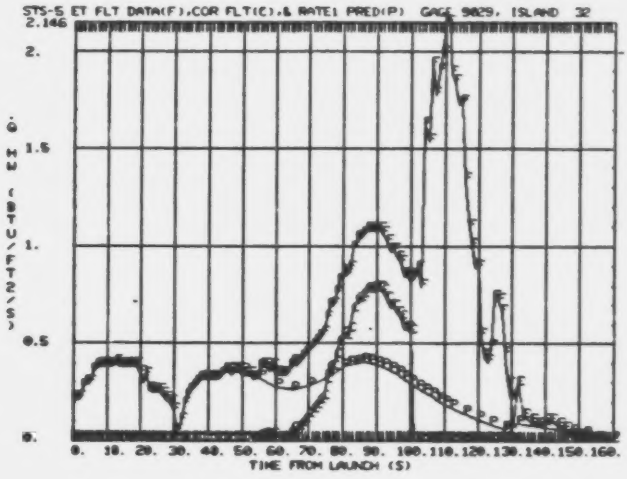
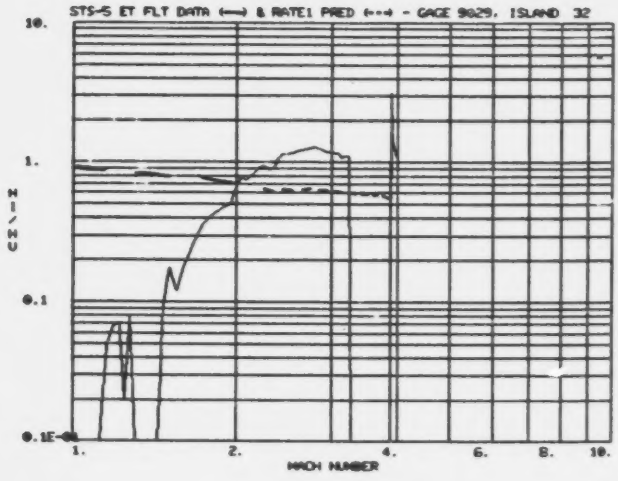
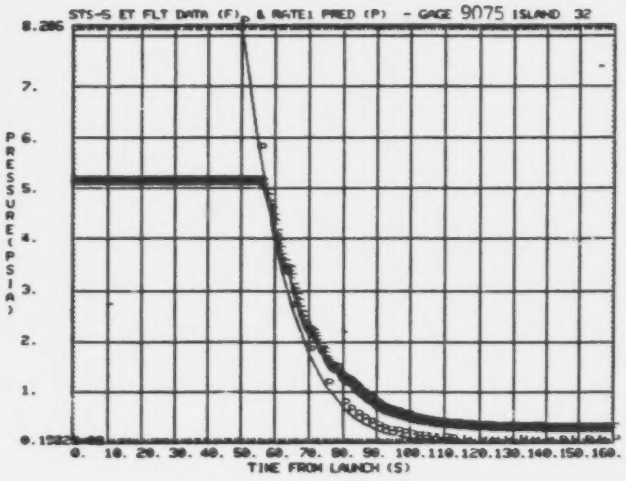
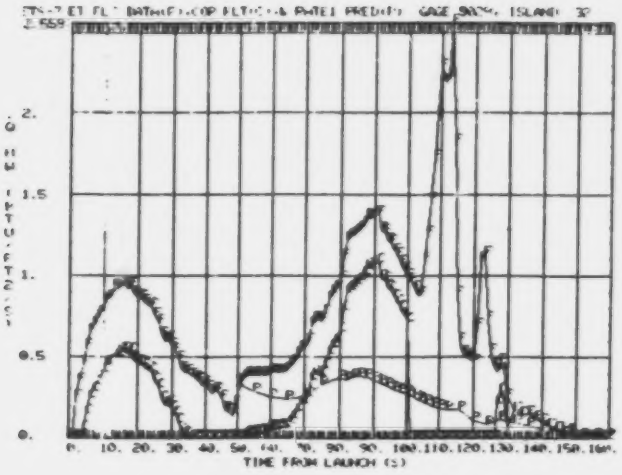


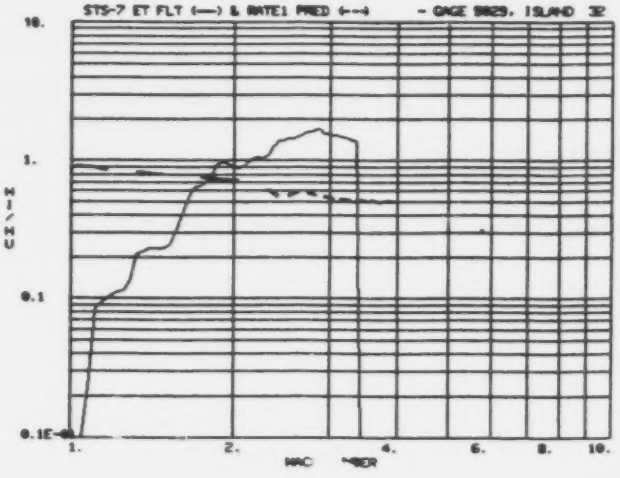


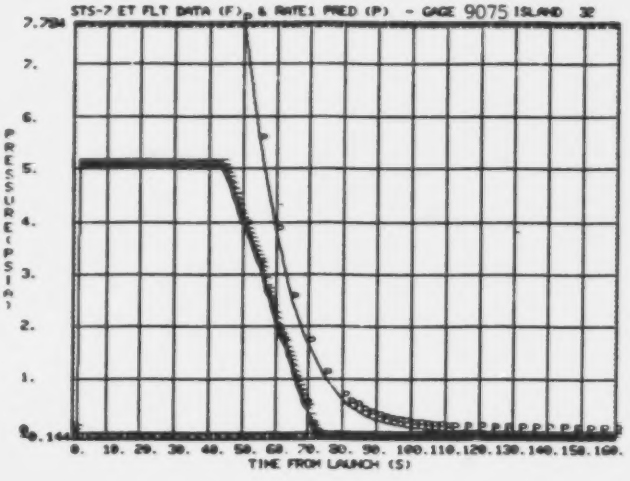


NOTE:
- Plume-Induced Heating was Considered

Fig. A.23d Aerothermal Analysis for GAge 9029 in STS-5







NOTE:
- Plume-Induced Heating was Considered
- Bad Pressure Measurements

Fig. A,23e Aerothermal Analysis for Gage 9029 in STS-7

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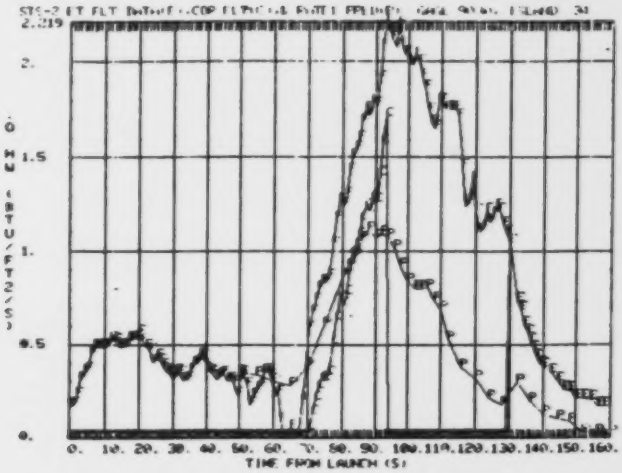

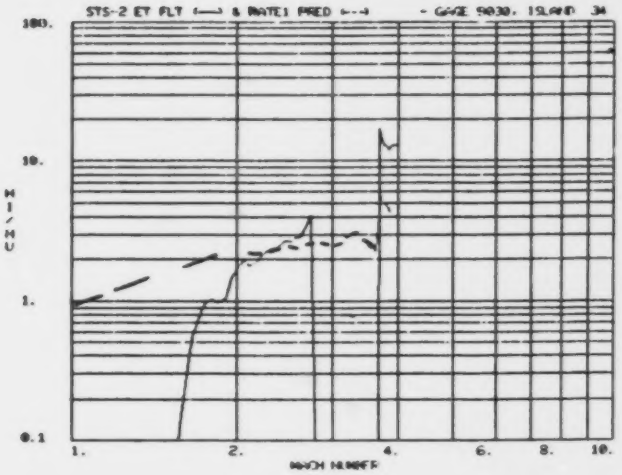

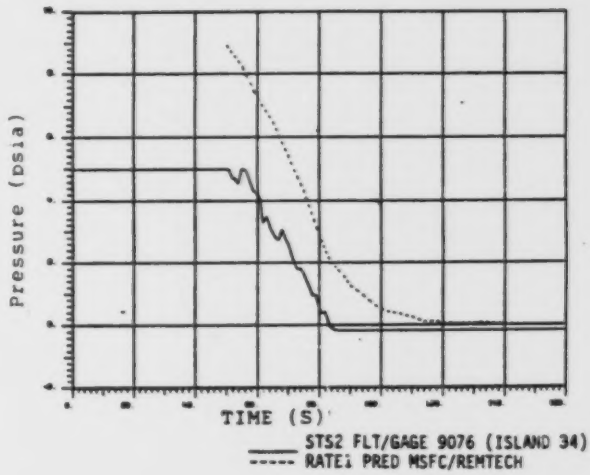

NOTE:
- Plume-Induced Heating was Considered
- Bad Pressure Measurements

Fig. A.24a Aerothermal Analysis for Gage 9030 in STS-2

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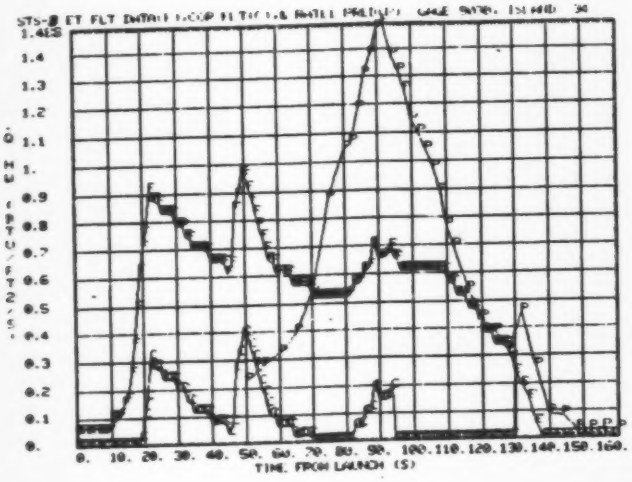

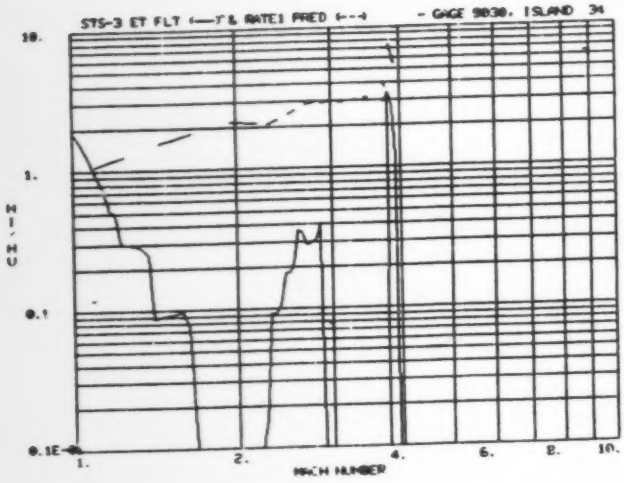

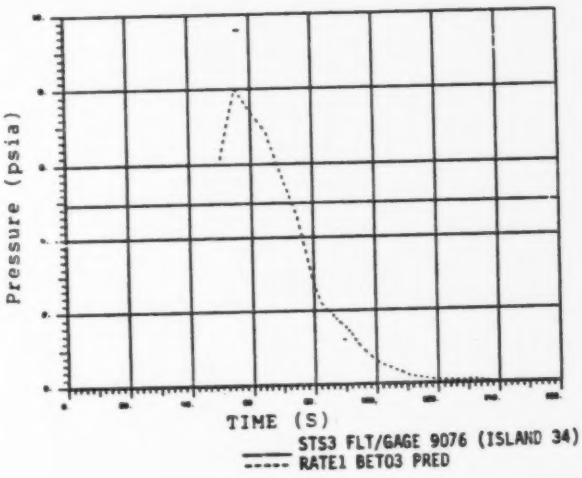

NOTE:
- Bad Pressure Measurements
- Questionable Measurements

Fig. A.24b Aerothermal Analysis for Gage 9030 in STS-3

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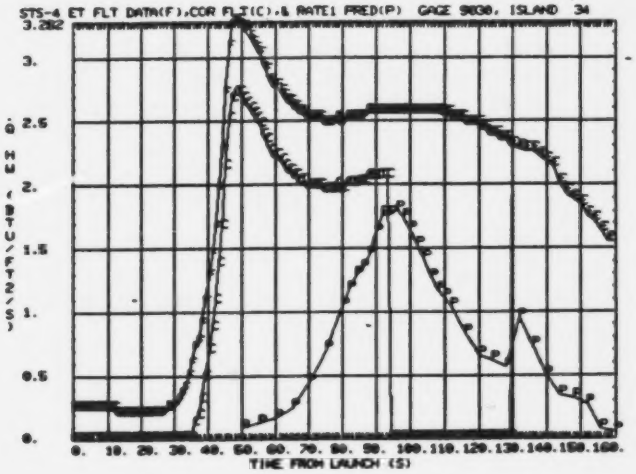
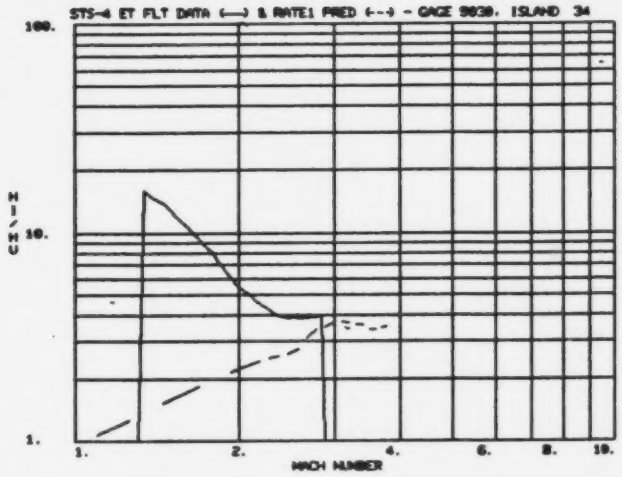
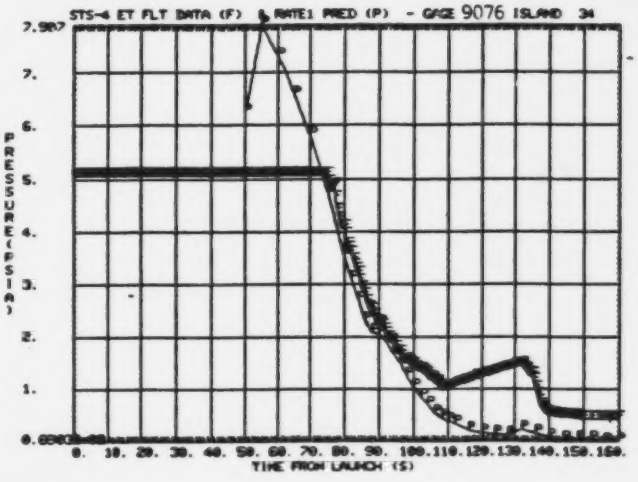
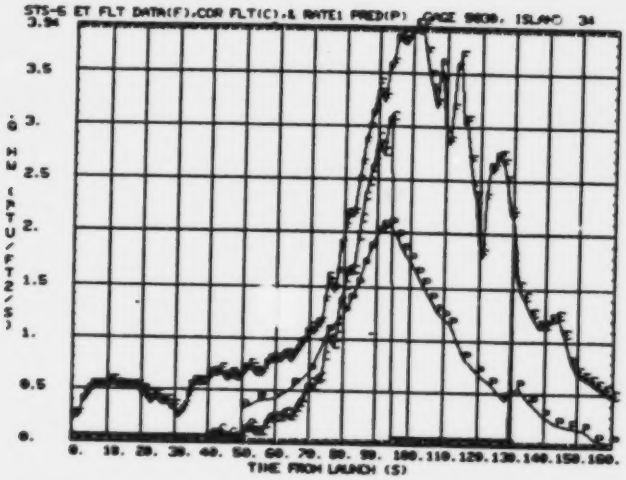


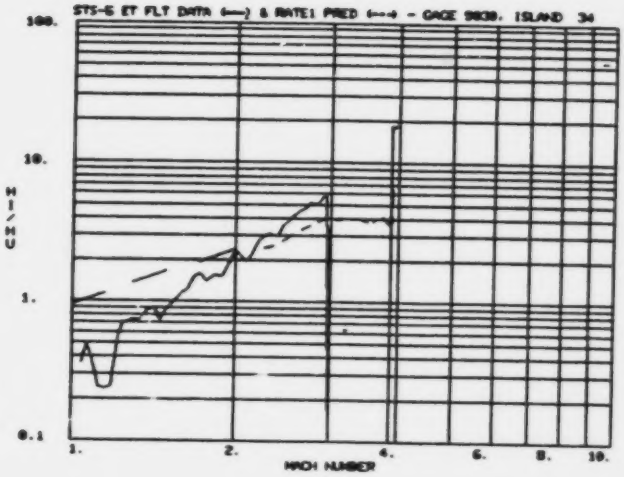


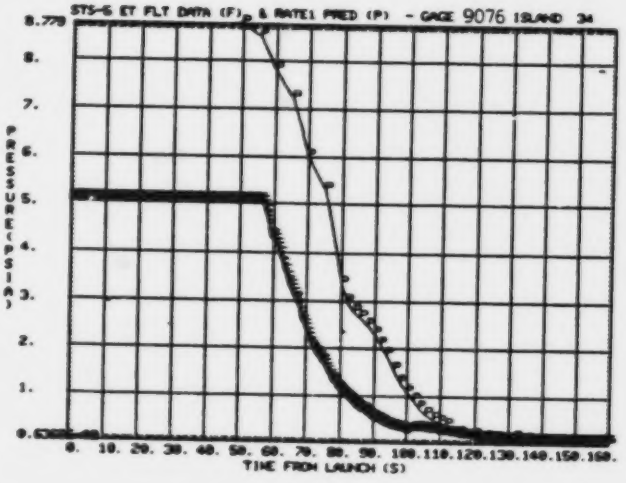


NOTE:
- Plume-Induced Heating was Considered
- Questionable Measurements

Fig. A,24c Aerothermal Analysis For Gage 9030 in STS-4







NOTE:
- Plume-Induced Heating was Considered

Fig. A.24d Aerothermal Analysis for Gage 9030 in STS-5

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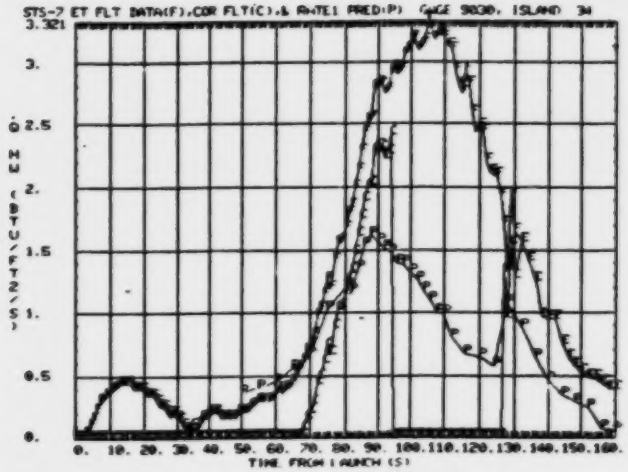

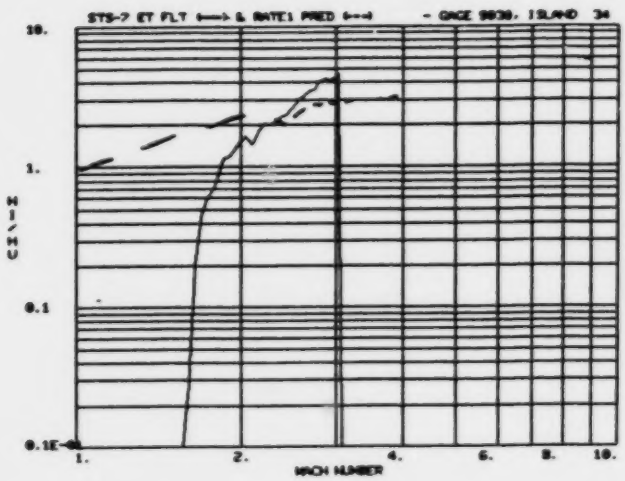

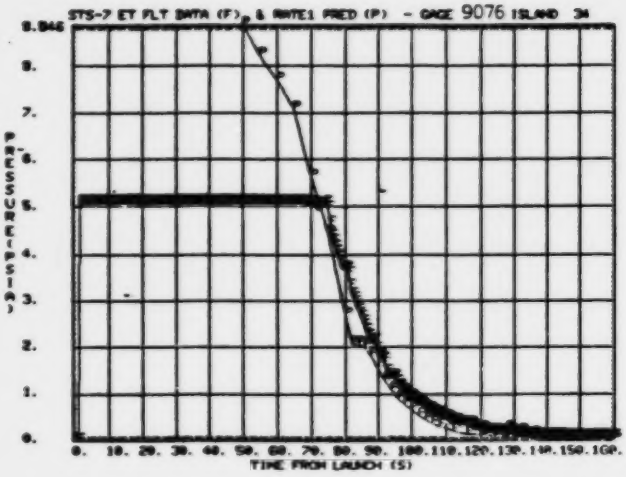

NOTE:
- Plume-Induced Heating was Considered

Fig. A.24e Aerothermal Analysis for Gage 9030 in STS-7

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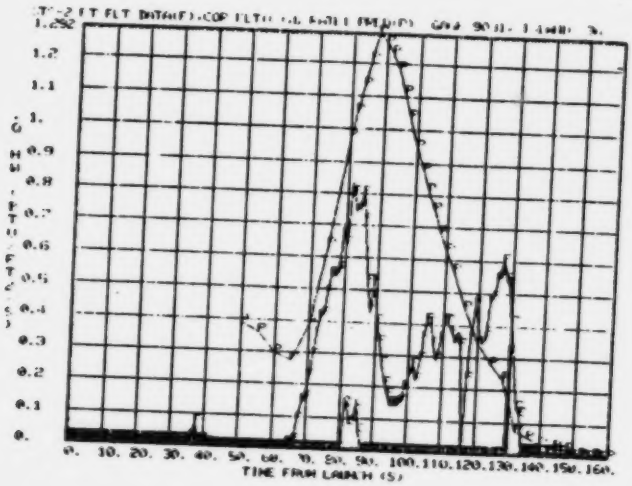
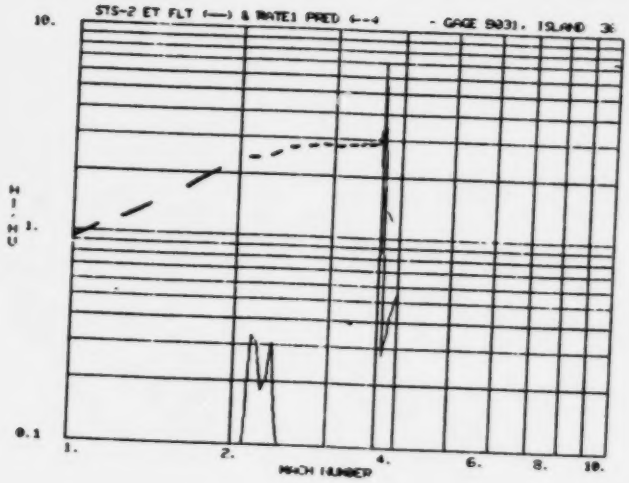
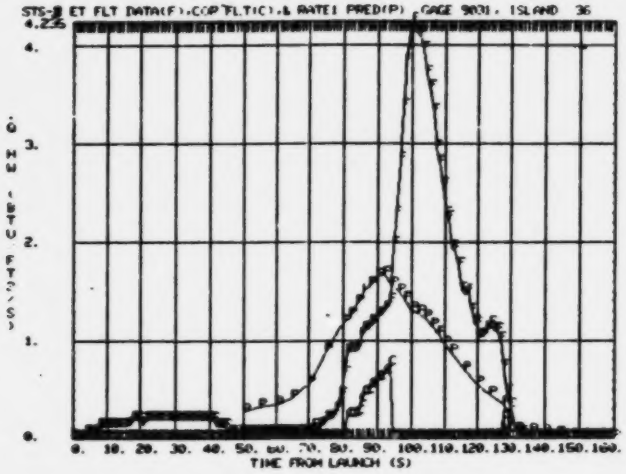
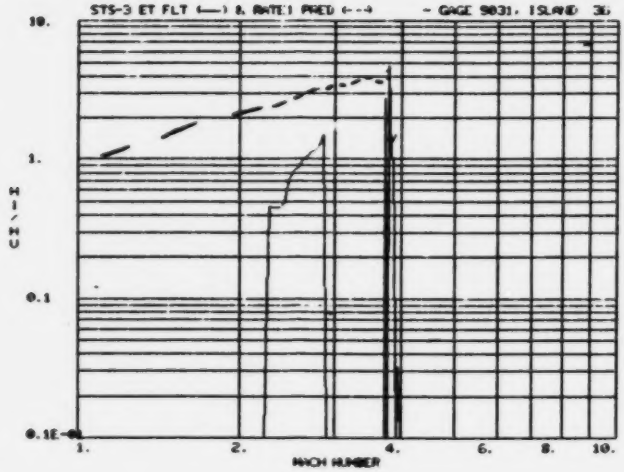




NOTE:
- Plume-Induced Heating was Considered

Fig. A.25a Aerothermal Analysis for Gage 9031 in STS-2





NOTE:
- Plume-Induced Heating was Considered

Fig. A.25b Aerothermal Analysis for Gage 9031 in STS-3

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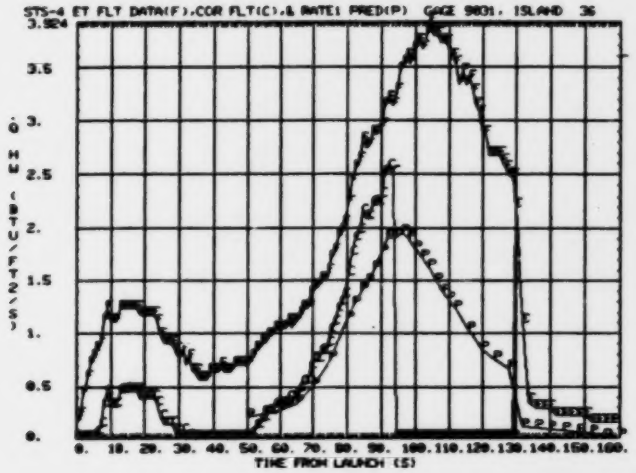

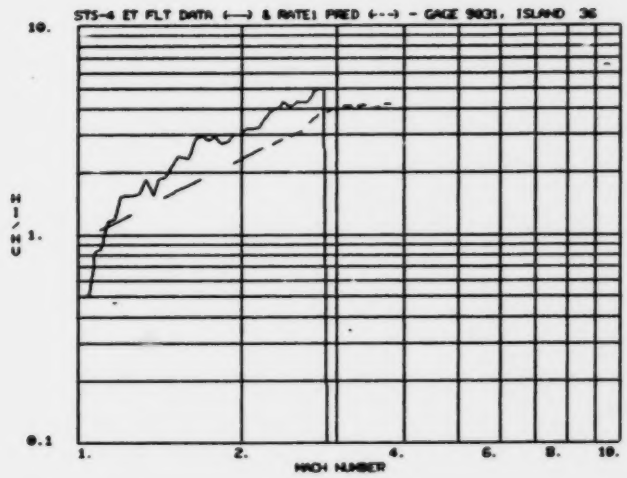

NOTE:
- Plume-Induced Heating was Considered

Fig. A.25c Aerothermal Analysis for Gage 9031 in STS-4

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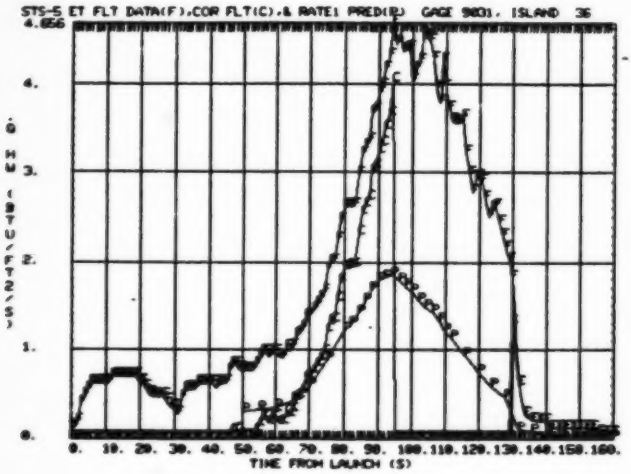
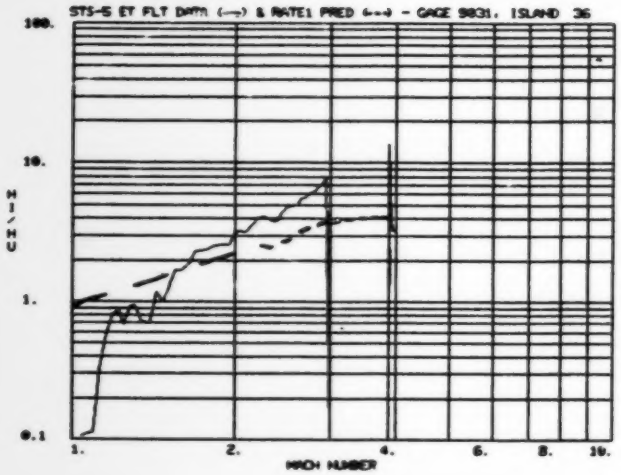
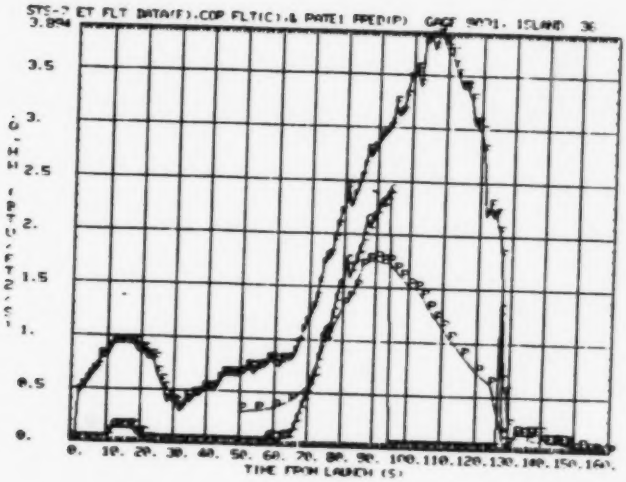
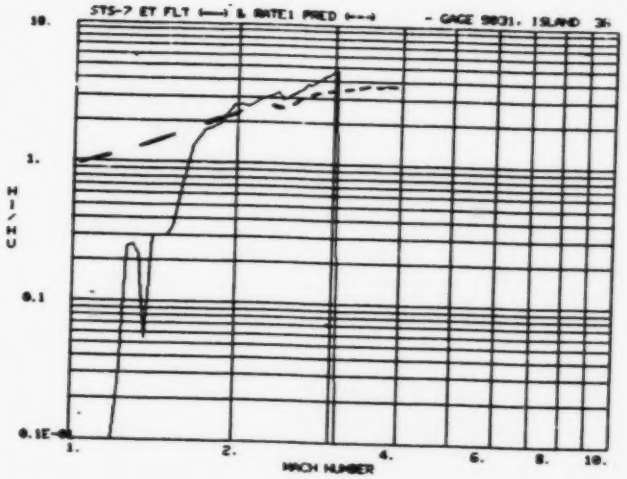




NOTE:
- Plume-Induced Heating was Considered

Fig. A.35d Aerothermal Analysis for Gage 9031 in STS-5





NOTE:
- Plume-Induced Heating was Considered

Fig. A.25e Aerothermal Analysis for Gage 9031 in STS-7

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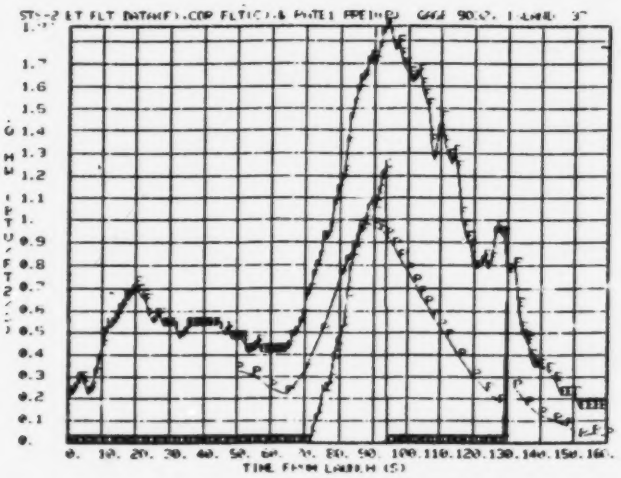

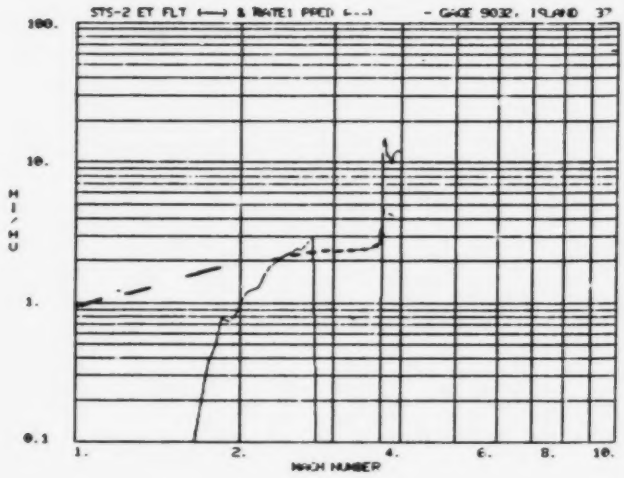

NOTE:
- Plume-Induced Heating was Considered

Fig. A.26a Aerothermal Analysis for Gage 9032 in STS-2

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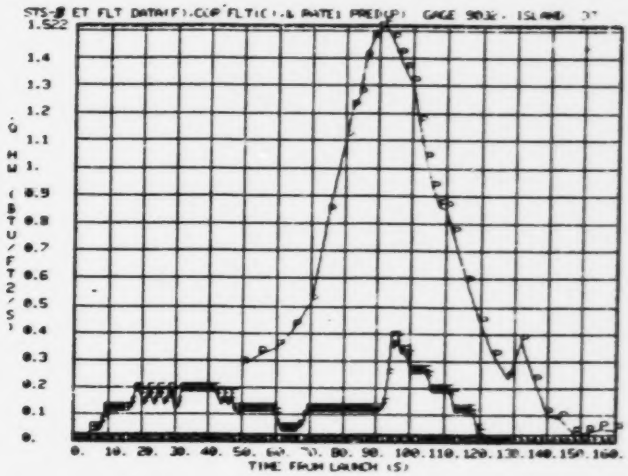

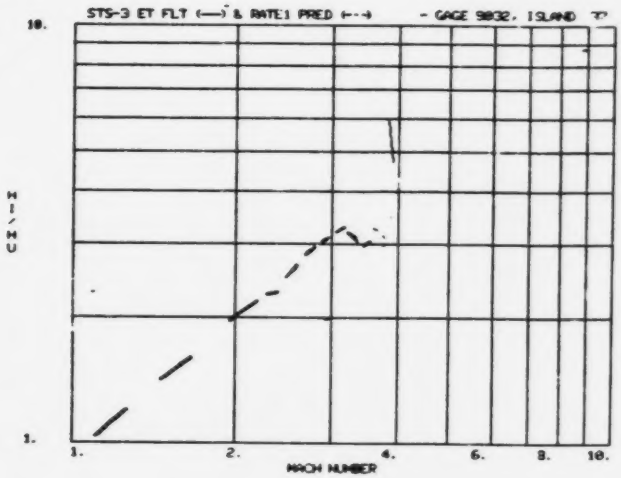

NOTE:

- Bad Heating Rate Measurements

Fig. A.26b Aerothermal Analysis for Gage 9032 in STS-3

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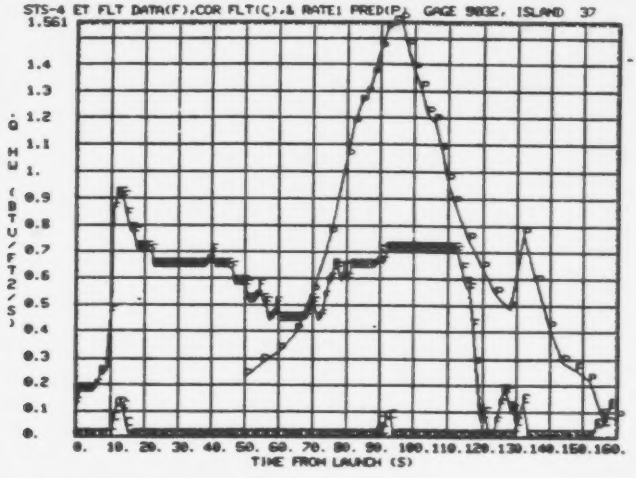

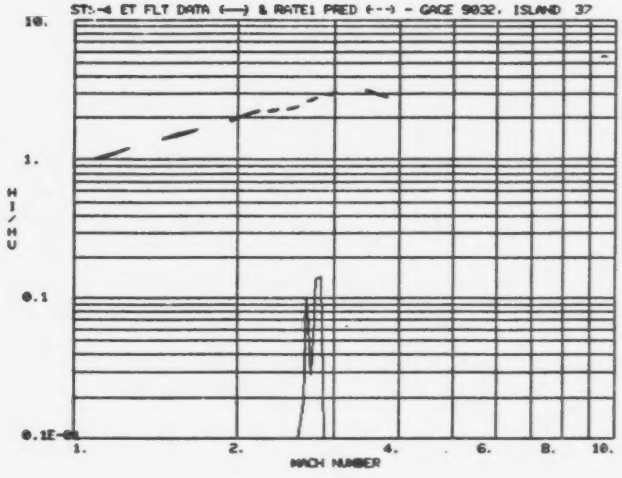

NOTE:
- Questionable Measurements

Fig. A.26c Aerothermal Analysis for Gage 9032 in STS-4

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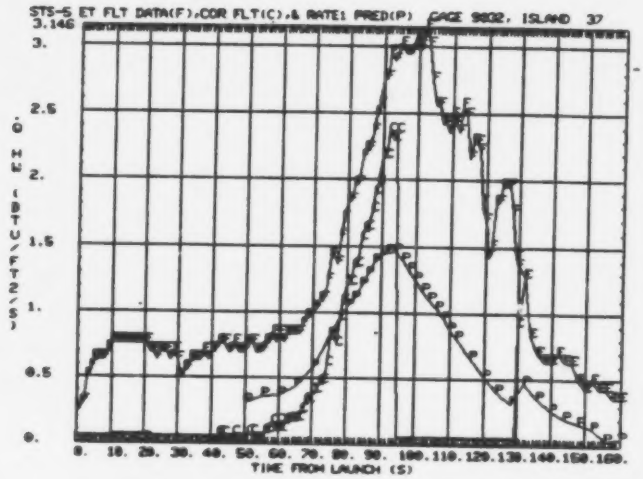

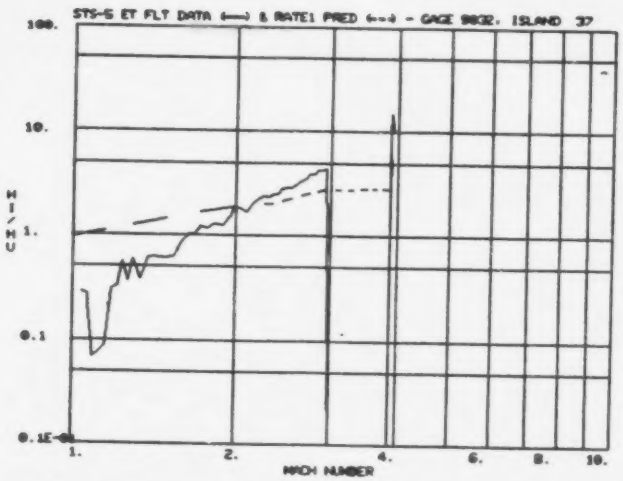

NOTE:
- Plume-Induced Heating was Considered

Fig. A,26d Aerothermal Analysis for Gage 9032 in STS-5

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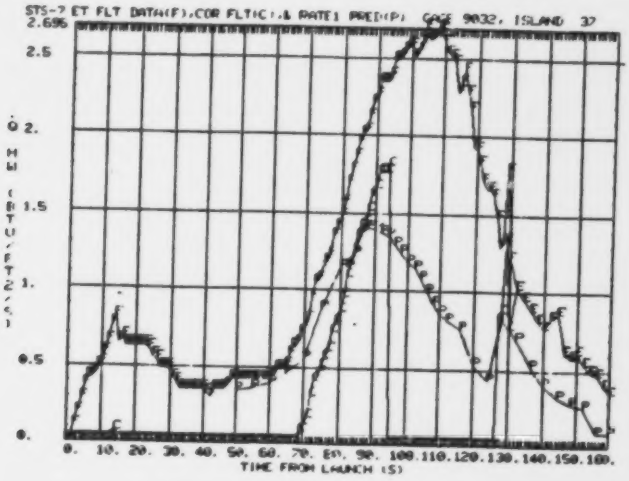

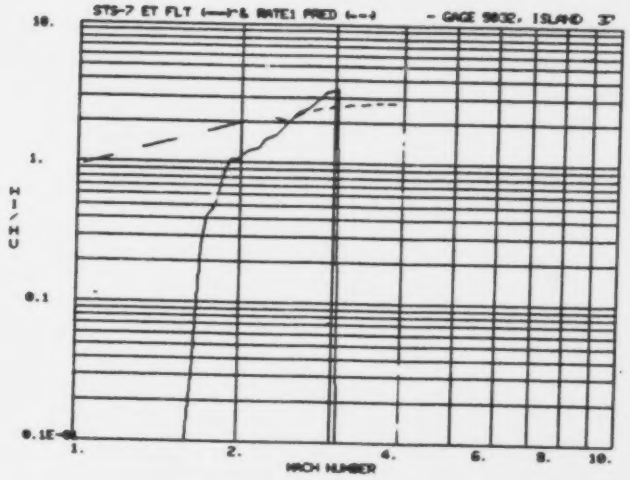

NOTE:
- Plume-Induced Heating was Considered

Fig. A.26e Aerothermal Analysis for GAge 9032 in STS-7

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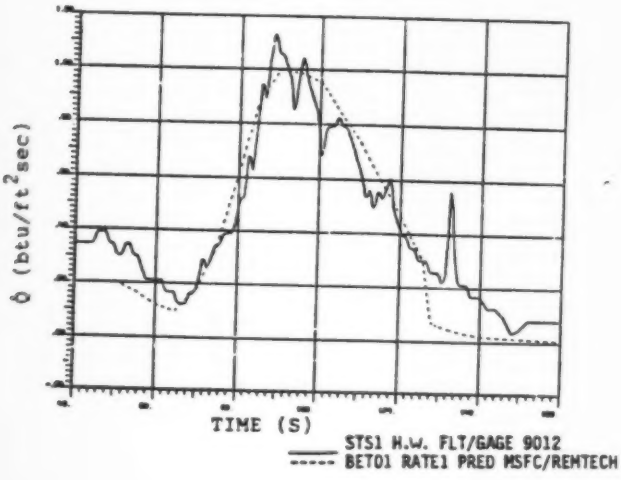


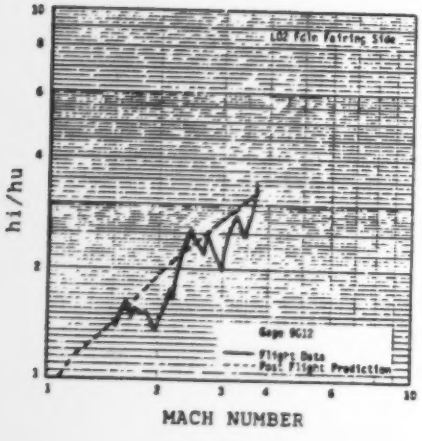
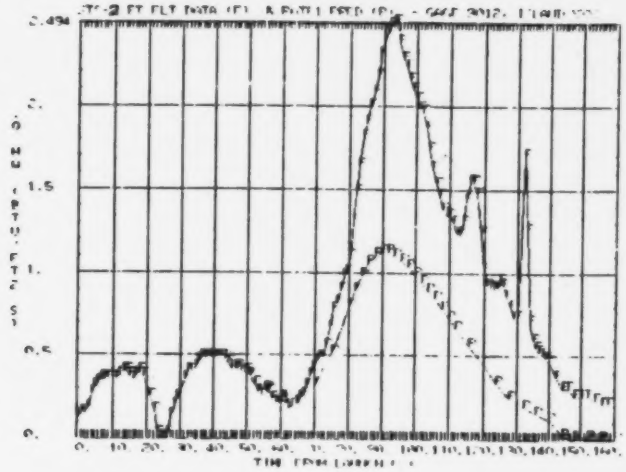


Fig. A.27a Aerothermal Analysis for Gage 9012 in STS-1



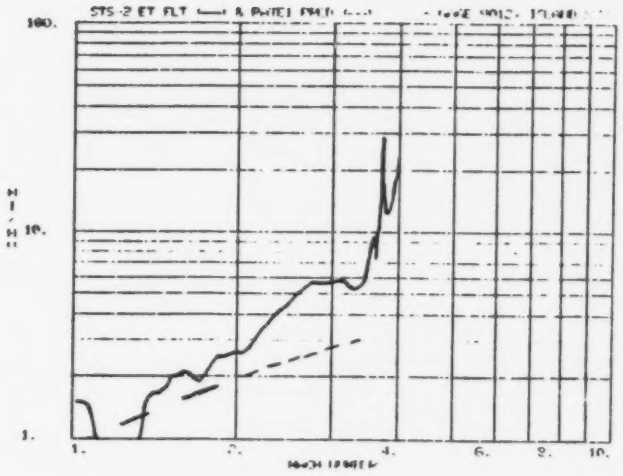


Fig. A.27b Aerothermal Analysis for Gage 9012 in STS-2

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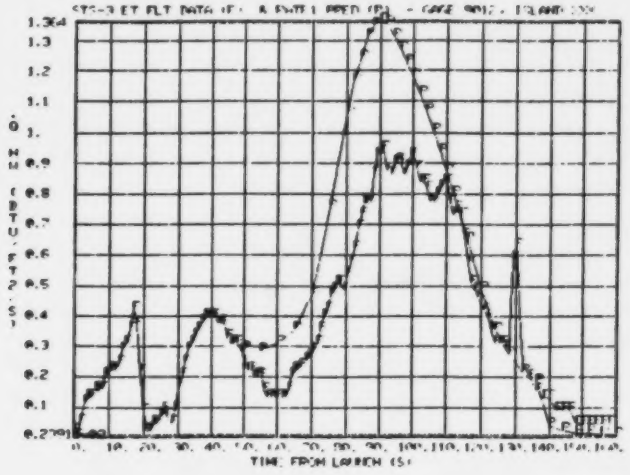


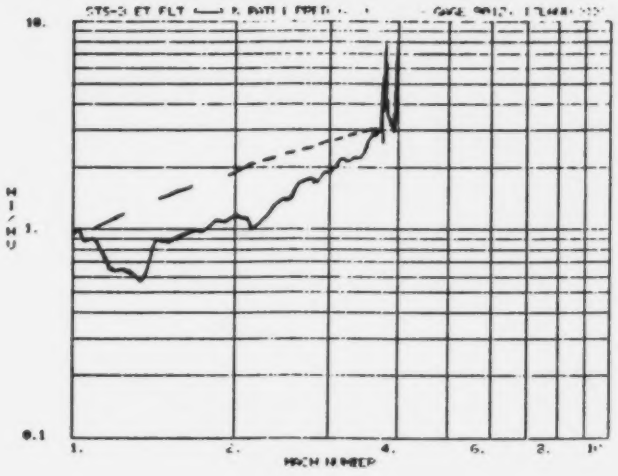
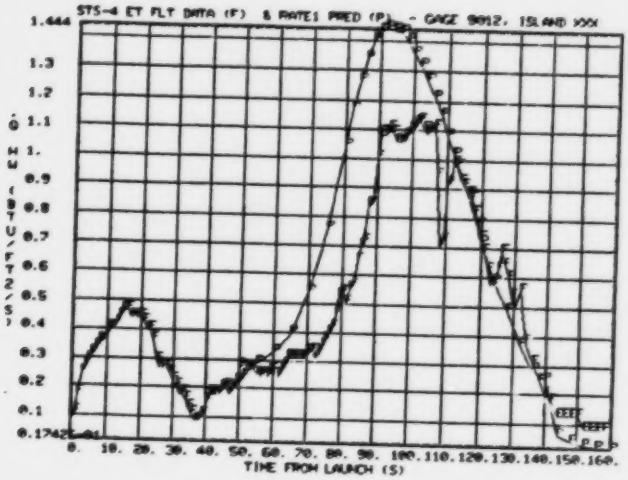


Fig. A.27c Aerothermal Analysis for Gage 9012 in STS-3



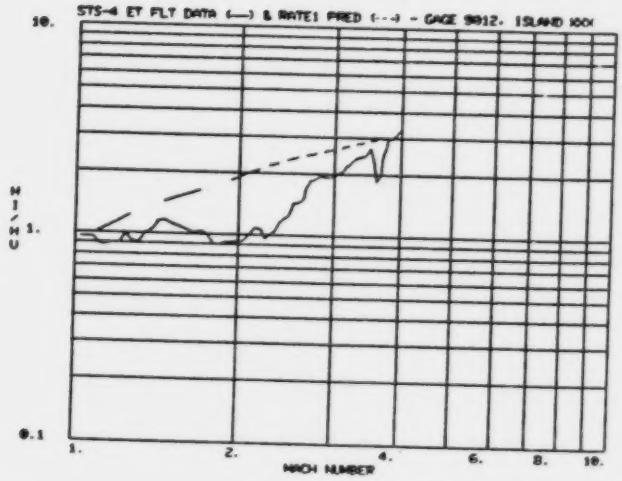


Fig. A.27d Aerothermal Analysis for Gage 9012 in STS-4

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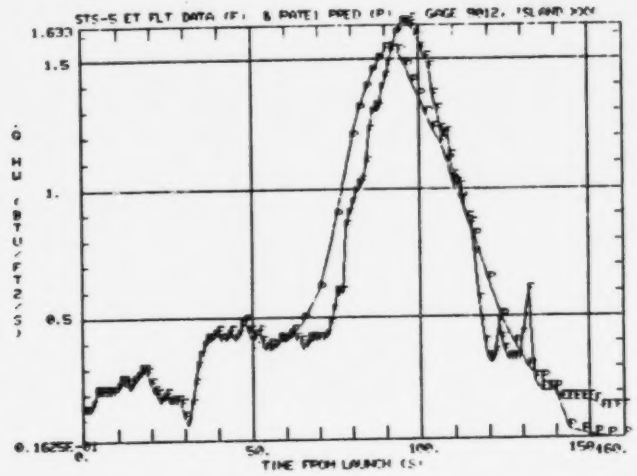

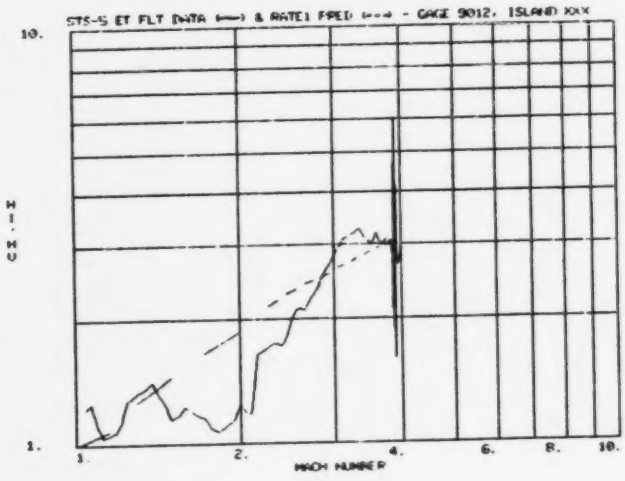

Fig, A.27e Aerothermal Analysis for Gage 9012 in STS-5

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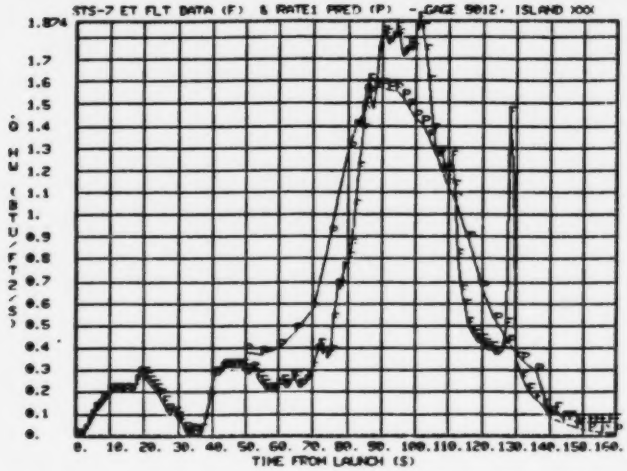

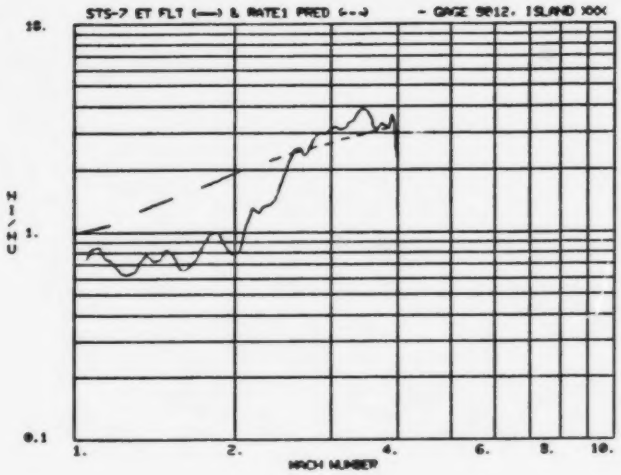

Fig. A.27f Aerothermal Analysis for Gage 9012 in STS-7

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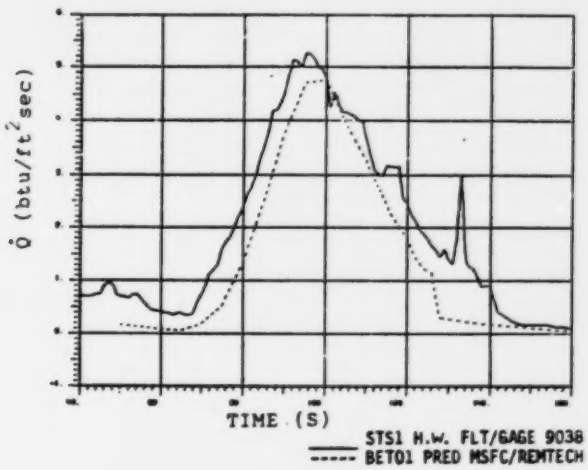

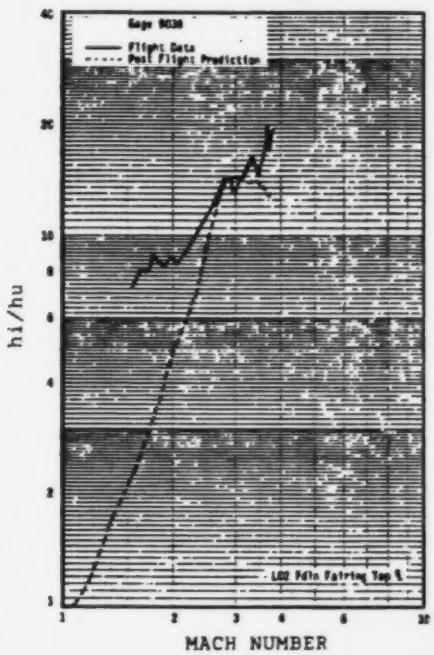

Fig. A.28a Aerothermal Analysis for Gage 9038 in STS-1

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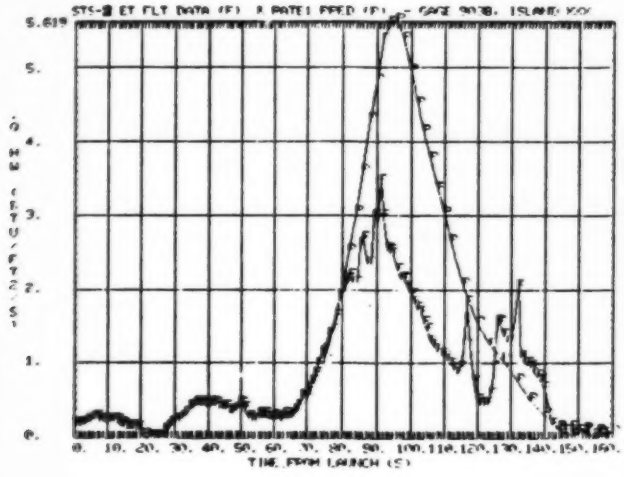


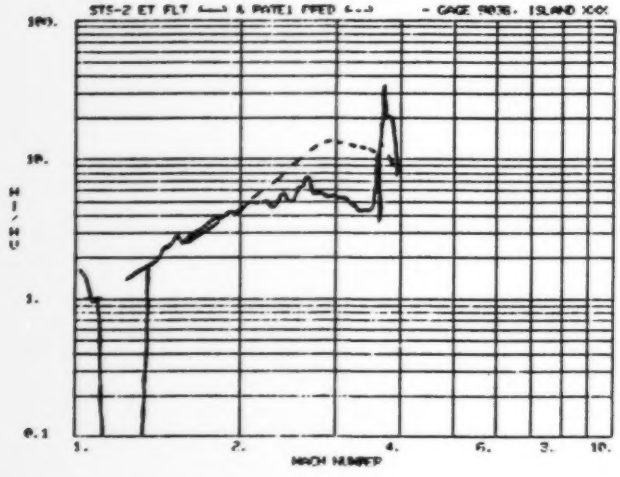
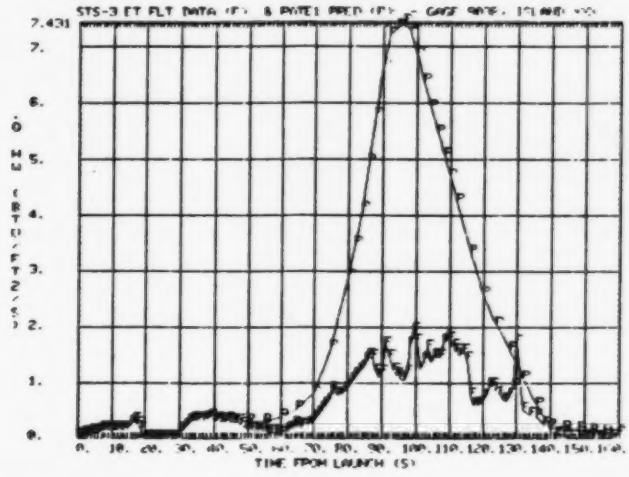


Fig. A.28b Aerothermal Analysis for GAge 9038 in STS-2



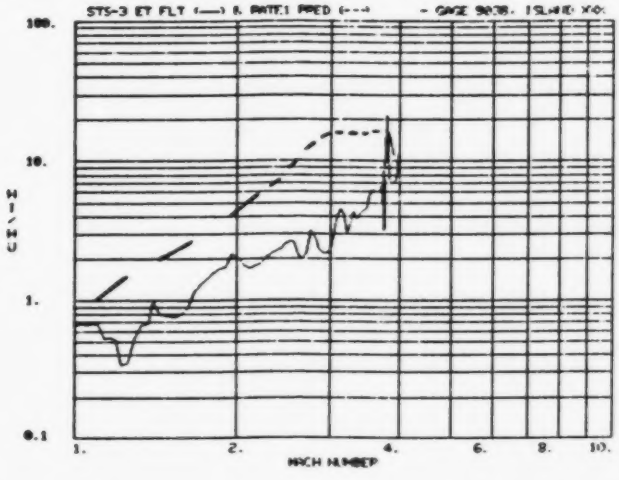


Fig. A.28c Aerothermal Analysis for Gage 9038 in STS-3

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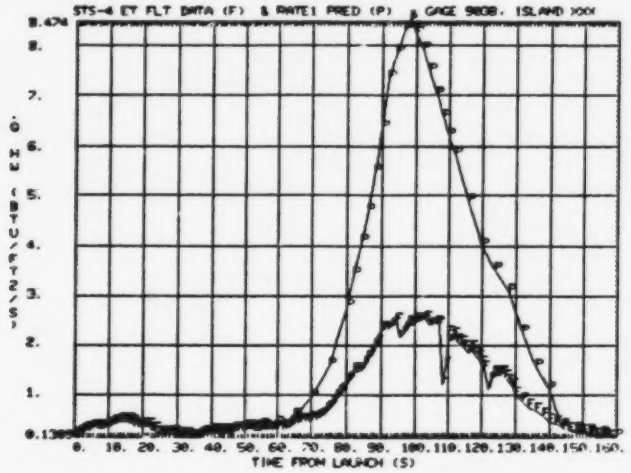


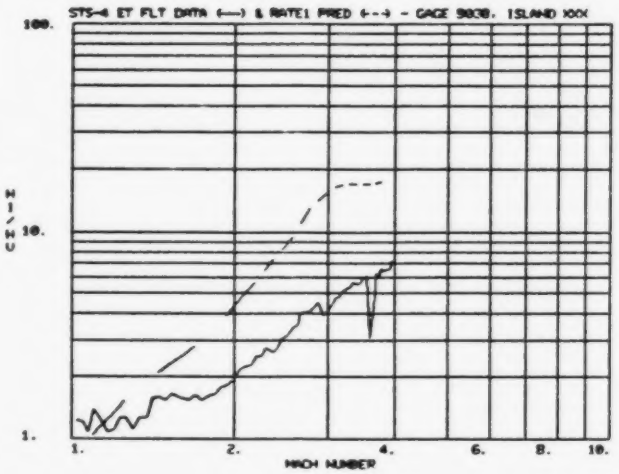
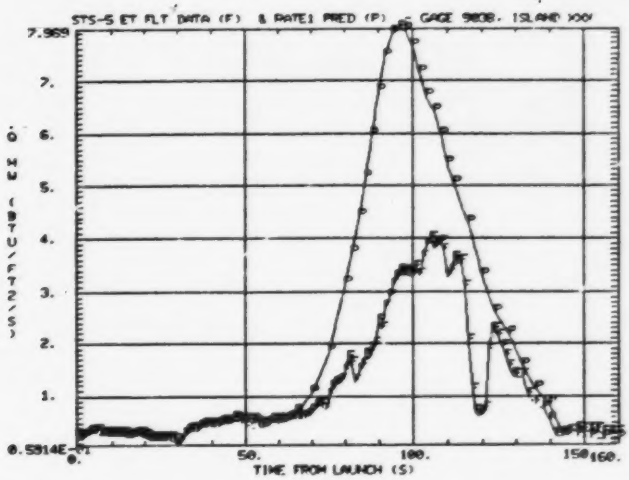


Fig. A.28d Aerothermal Analysis for Gage 9038 in STS-4



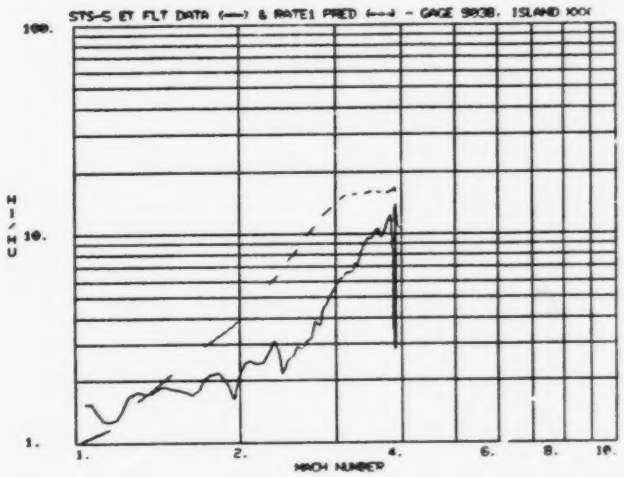


Fig. A.28e Aerothermal Analysis for Gage 9038 in STS-5

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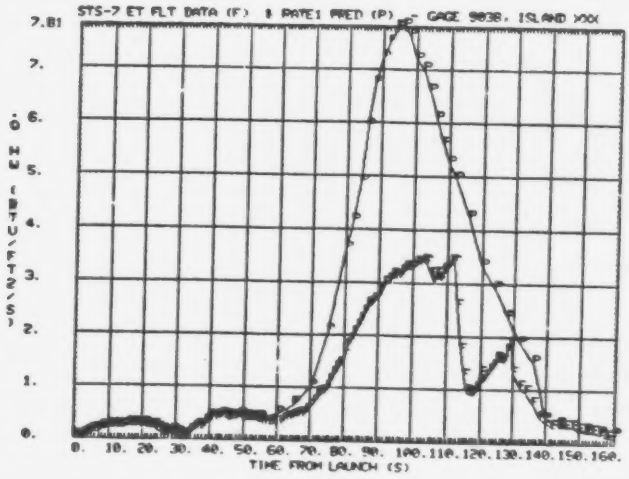

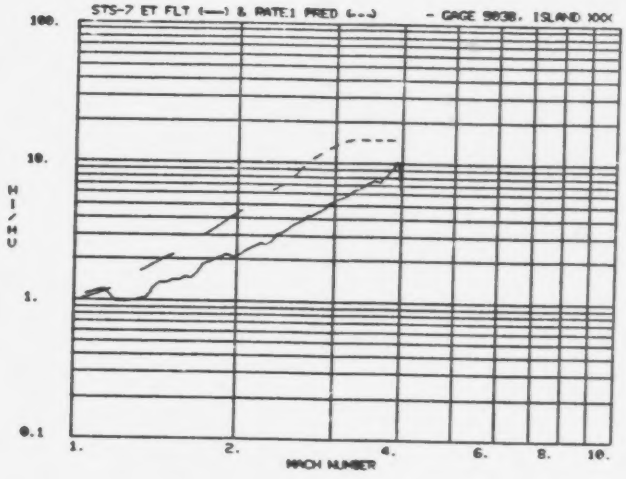

Fig. A.28f Aerothermal Analysis for Gage 9038 in STS-7

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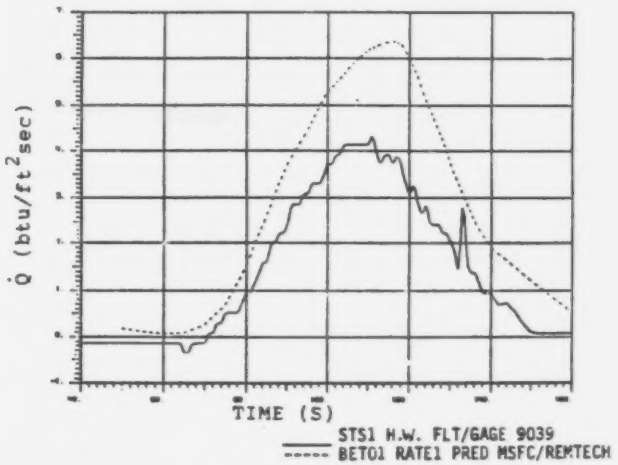


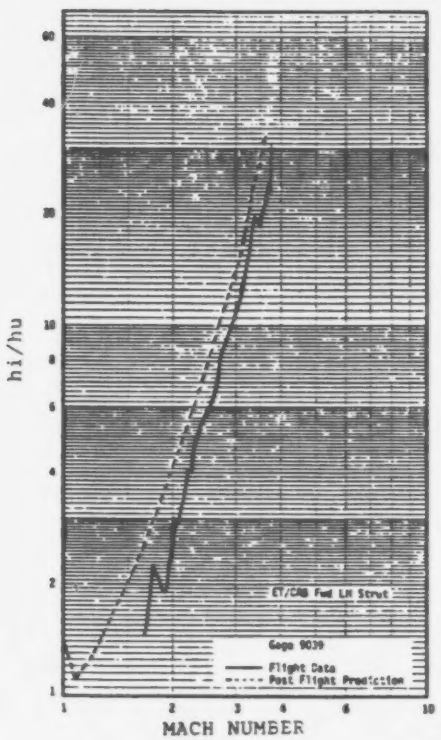
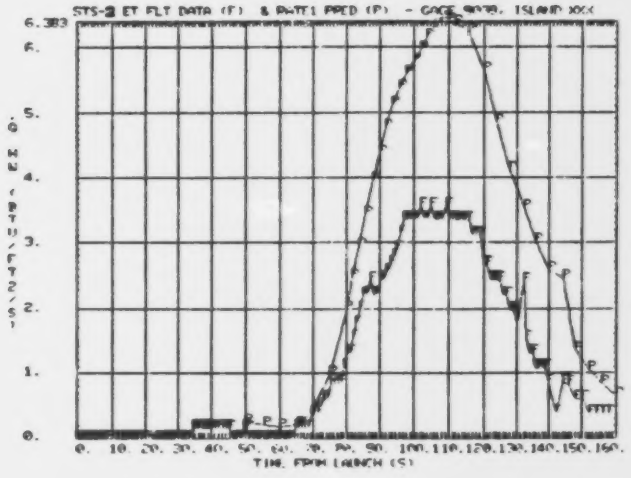


Fig. A.29a Aerothermal Analysis for Gage 9039 in STS-1



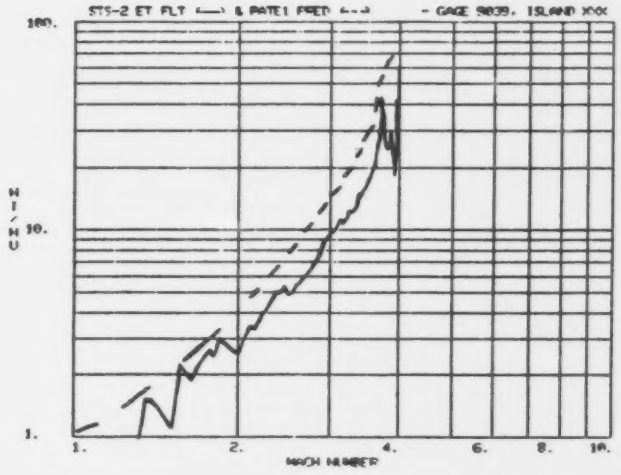


Fig. A.29b Aerothermal Analysis for Gage 9039 in STS-2

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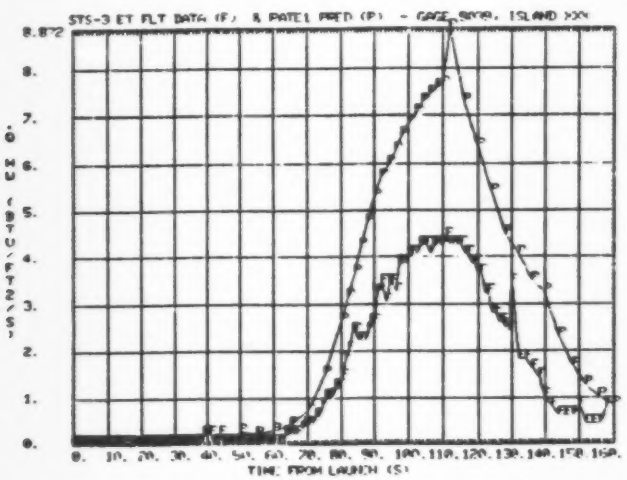

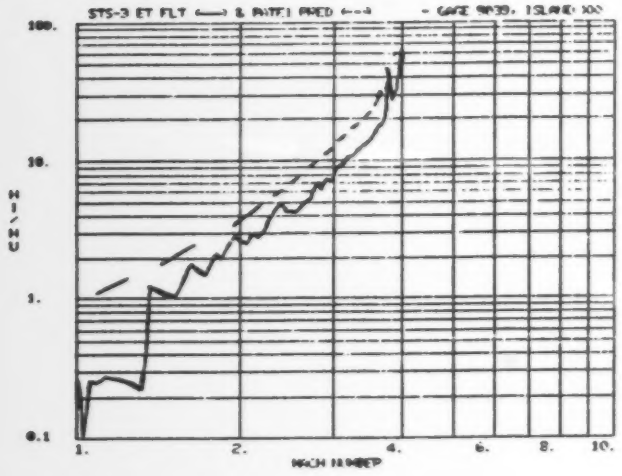

Fig. A.29c Aerothermal Analysis for Gage 9039 in STS-3

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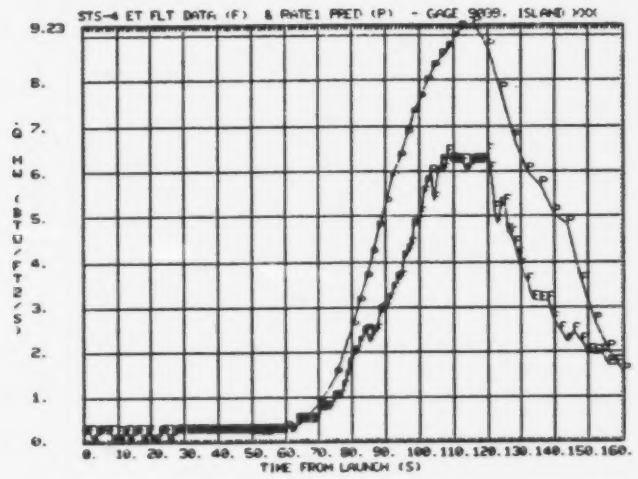


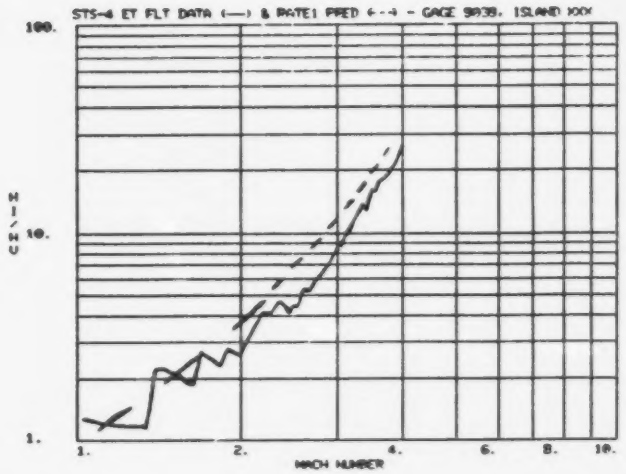
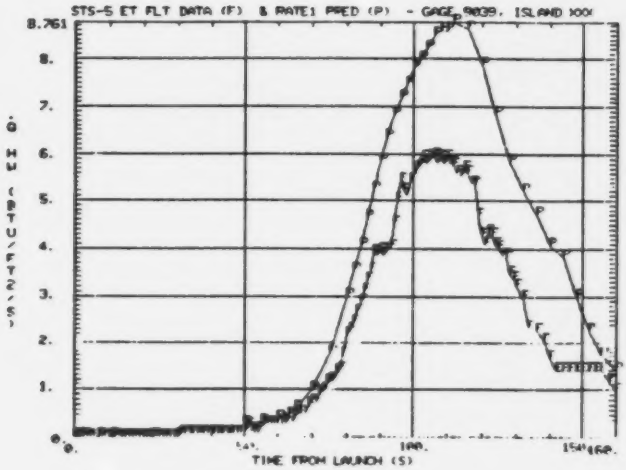


Fig. A.29d Aerothermal Analysis for Gage 9039 in STS-4



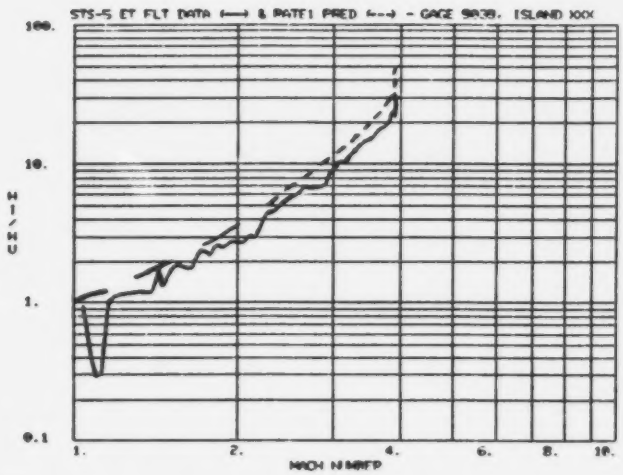


Fig. A.29e Aerothermal Analysis for Gage 9039 in STS-5

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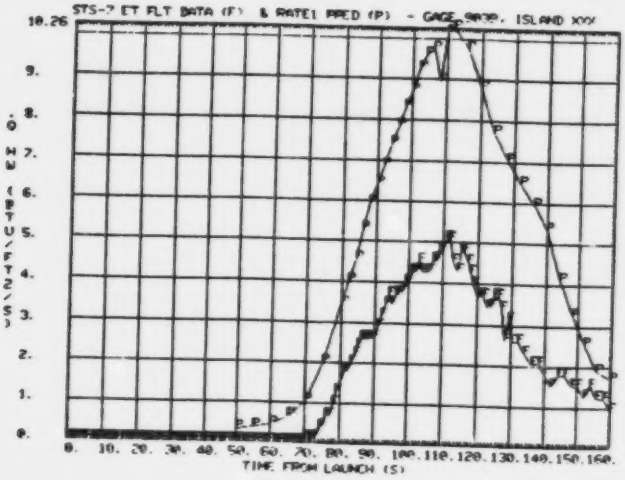


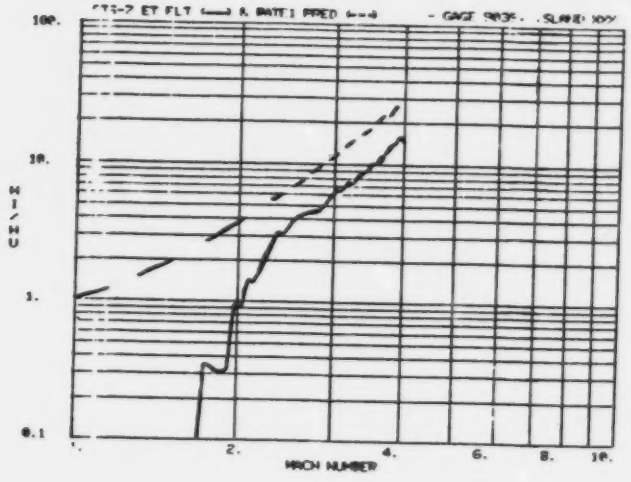
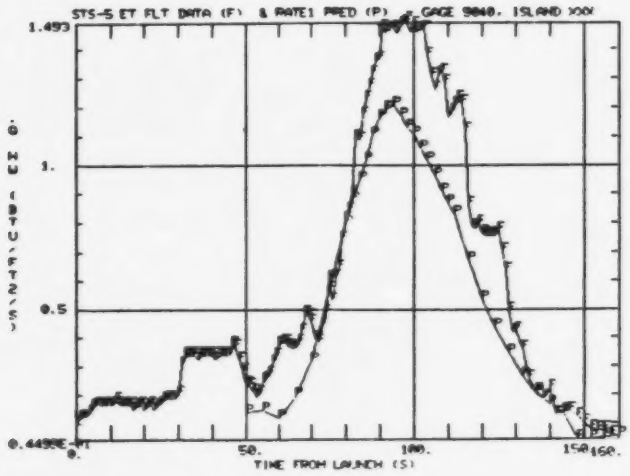


Fig. A.29f Aerothermal Analysis for Gage 9039 in STS-7



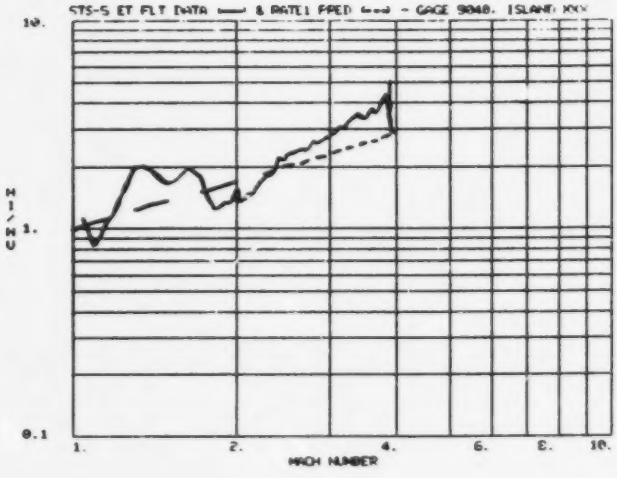


Fig. A.30a Aerothermal Analysis for Gage 9040 in STS-5

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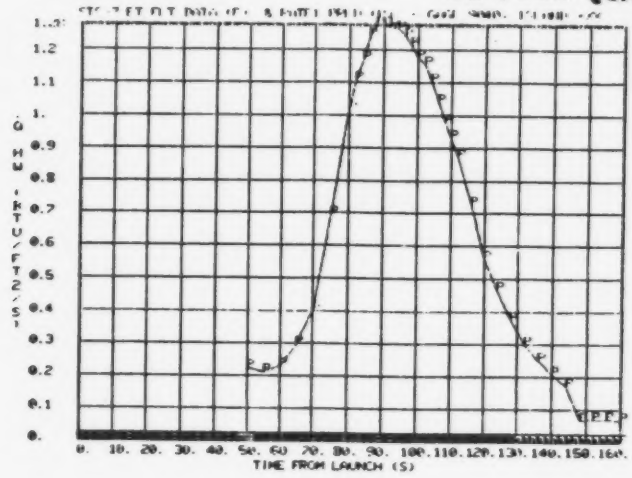
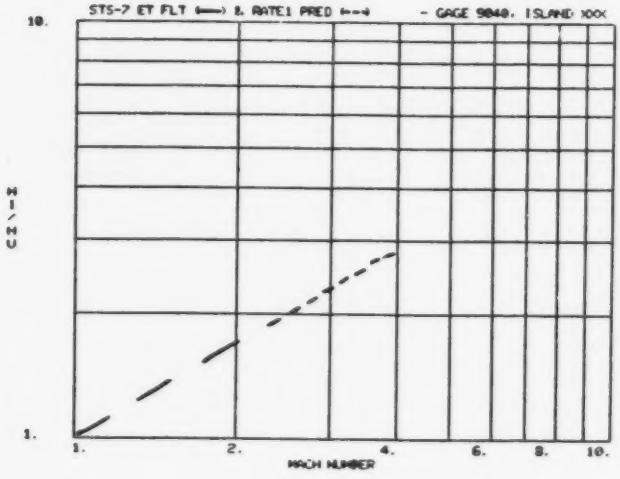
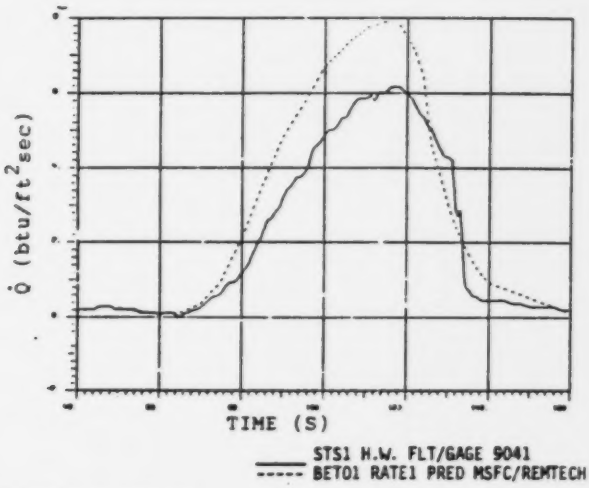




NOTE:
- Bad Heating Rate Measurements

Fig. A.30b Aerothermal Analysis for Gage 9040 in STS-7



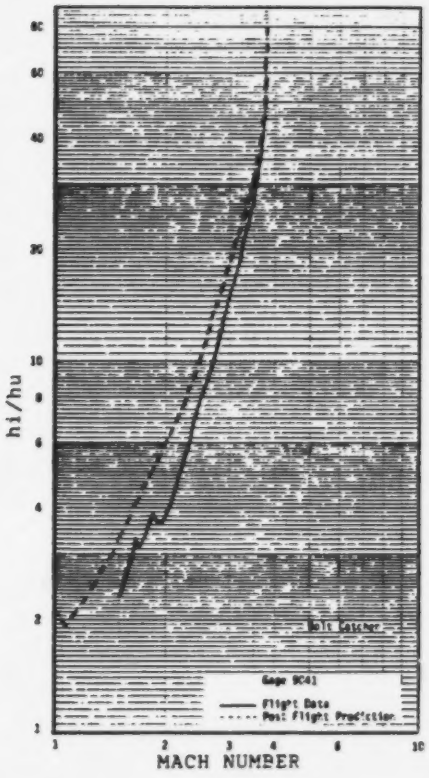
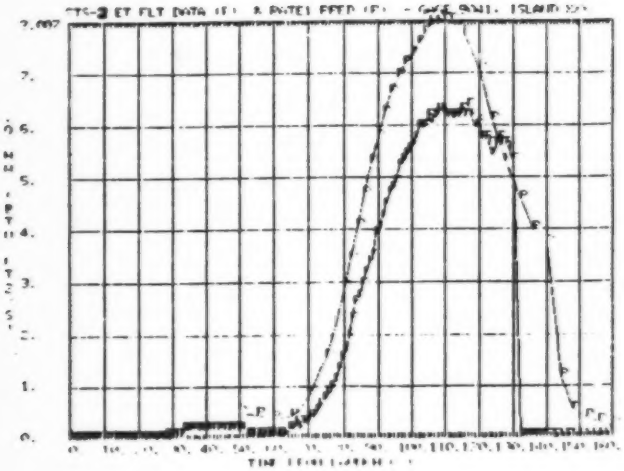


Fig. A.31a Aerothermal Analysis for Gage 9041 in STS-1



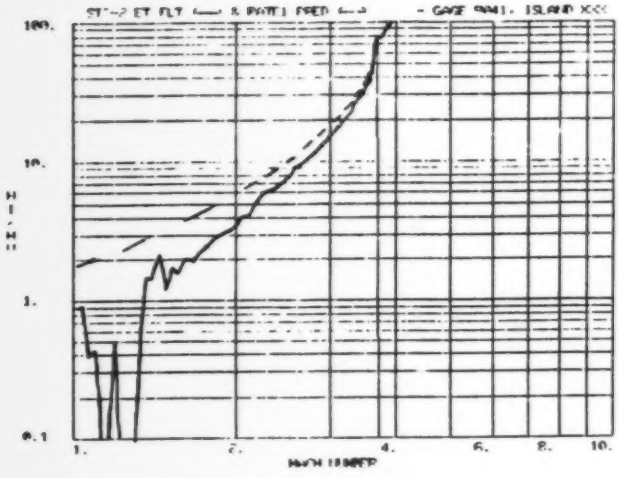


Fig. A.31b Aerothermal Analysis for Gage 9041 in STS-2

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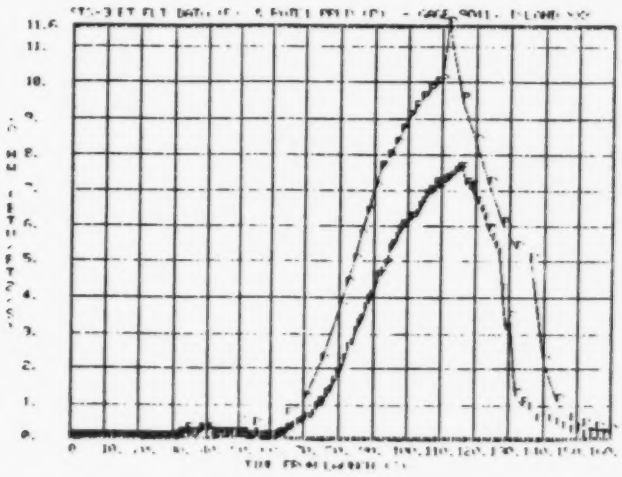

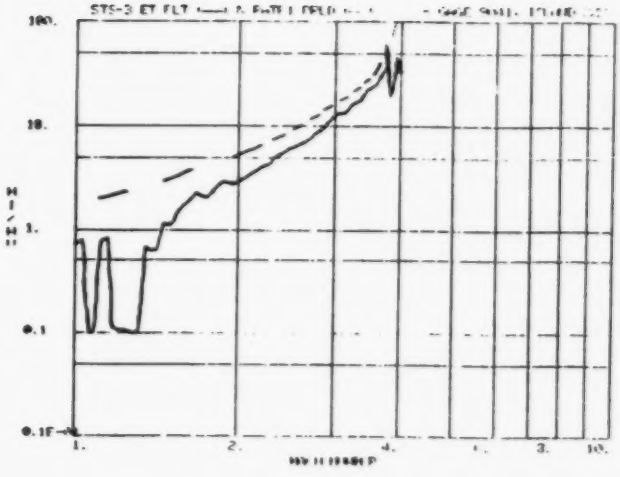

Fig. A.31c Aerothermal Analysis for Gage 9041 in STS-3

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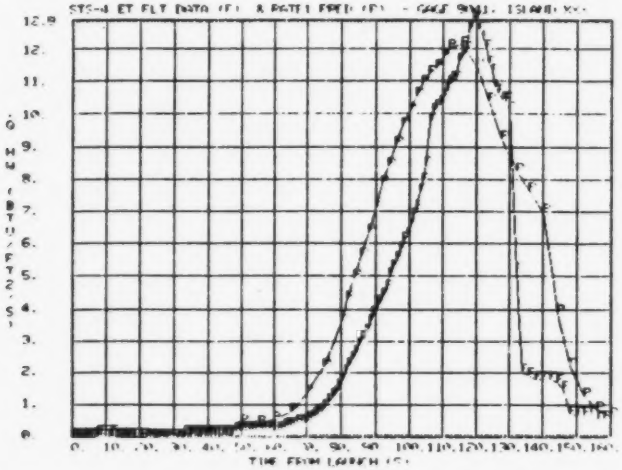

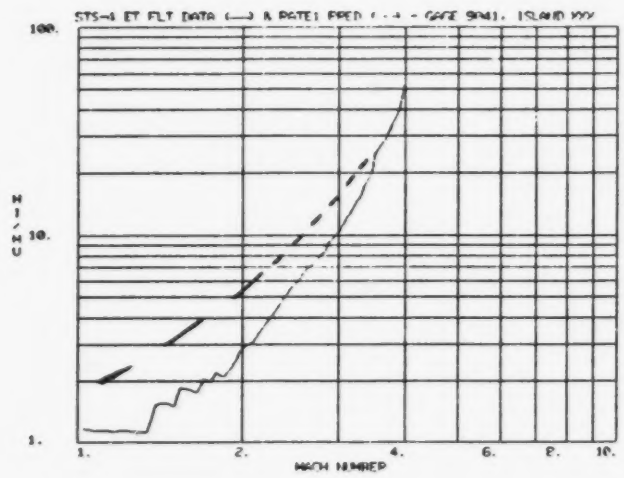

Fig. A.31d Aerothermal Analysis for Gage 9041 in STS-4

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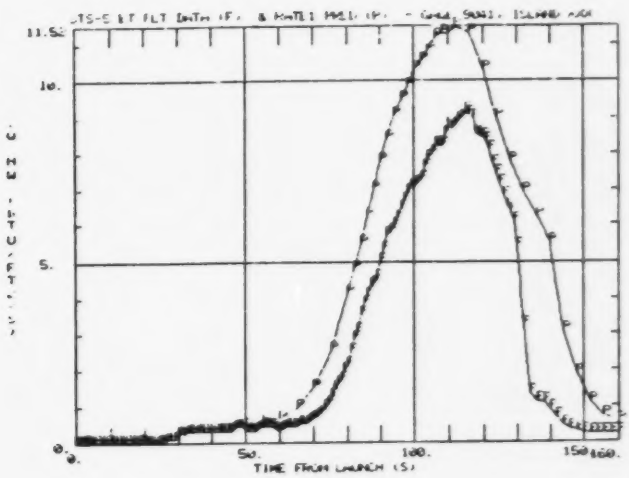

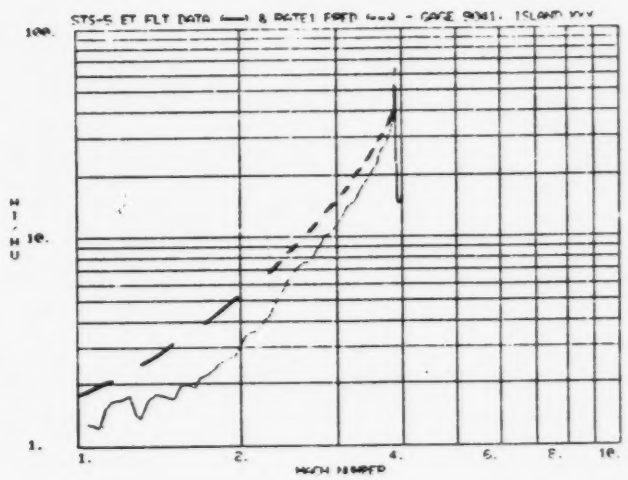

Fig. A.31e Aerothermal Analysis for Gage 9041 in STS-5

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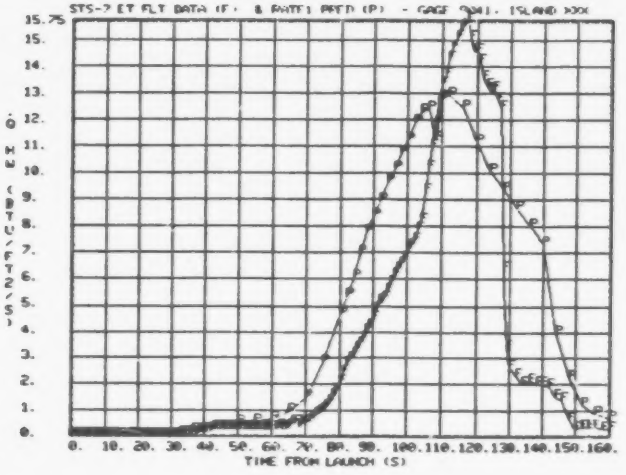


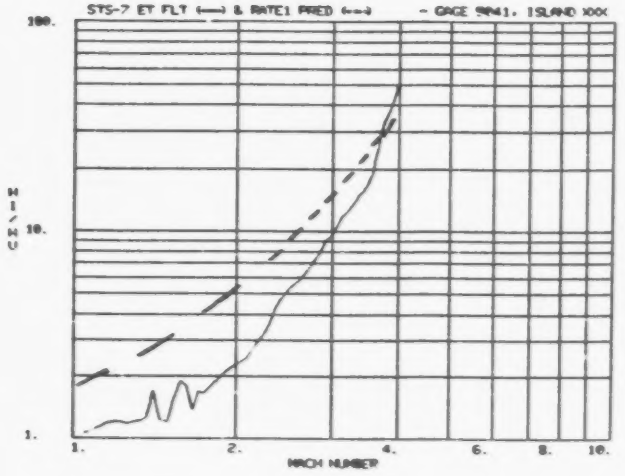
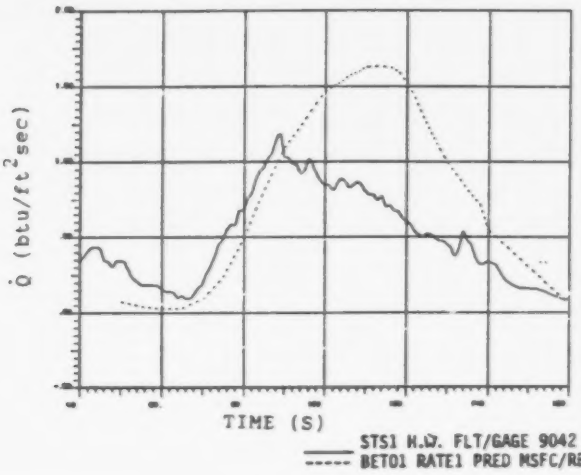


Fig. A.31f Aerothermal Analysis for GAge 9041 in STS-7



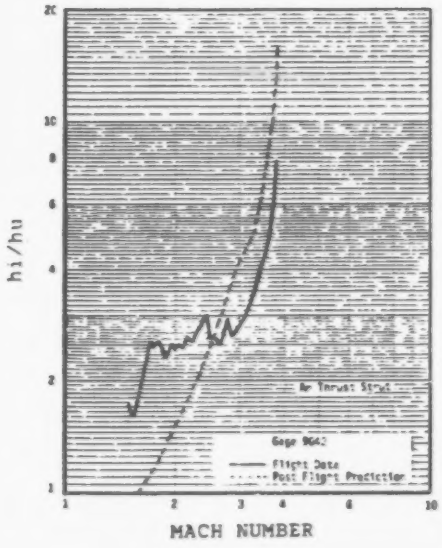


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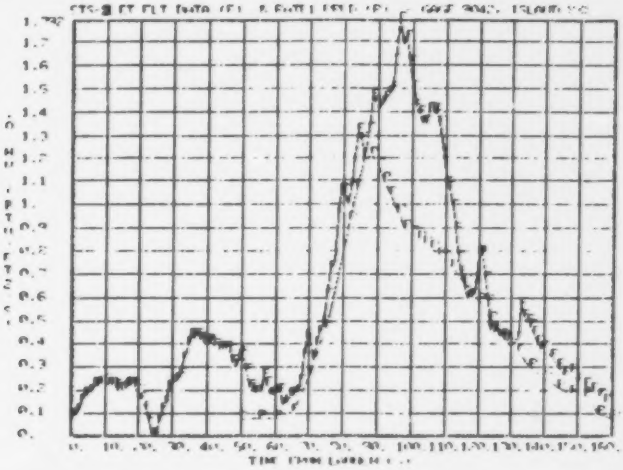
Fig. A.32a Aerothermal Analysis for Gage 9042 in STS-1



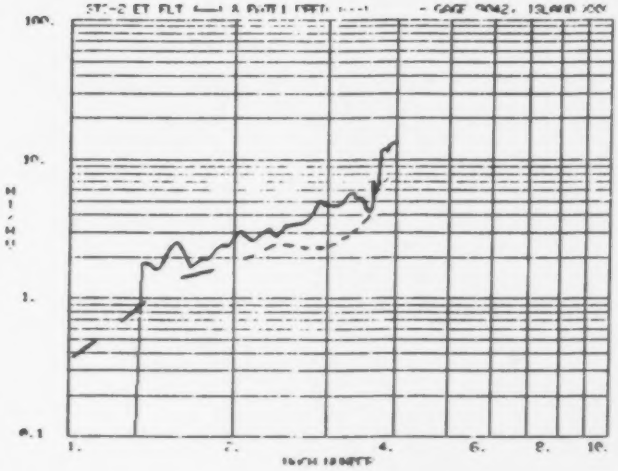


Fig. A.32b Aerothermal Analysis for Gage 9042 in STS-2

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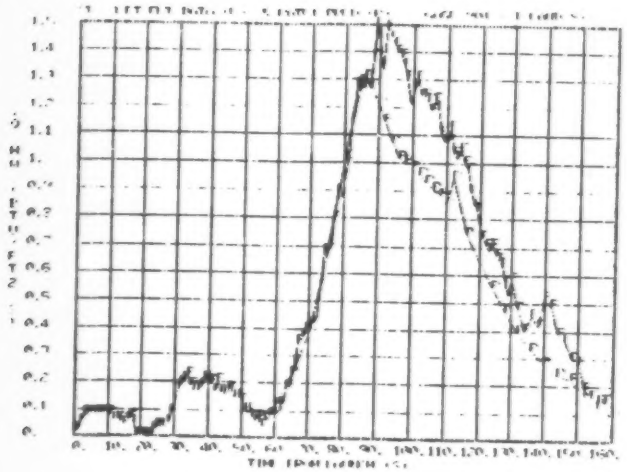


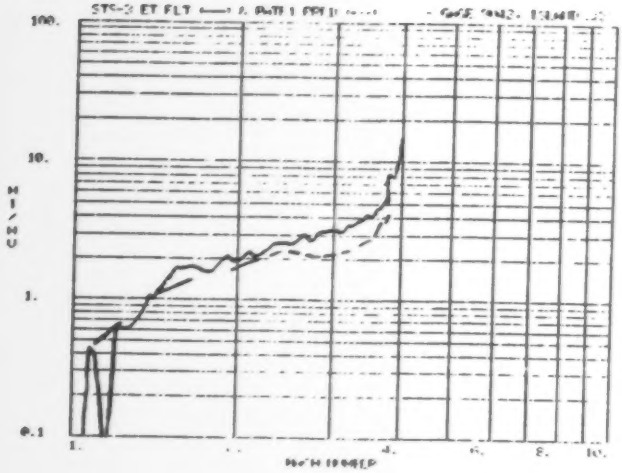
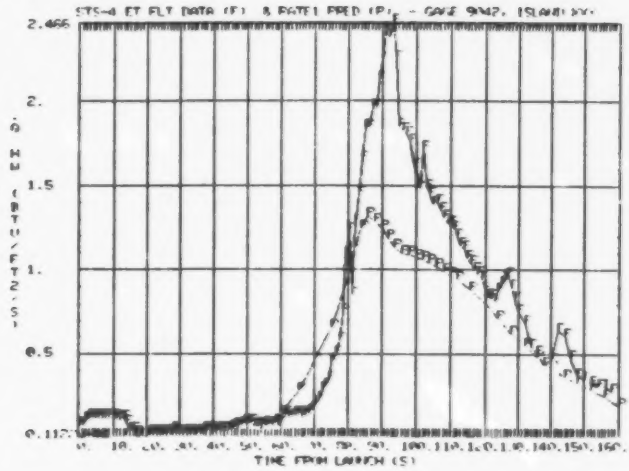


Fig. A.32c Aerothermal Analysis for Gage 9042 in STS-3



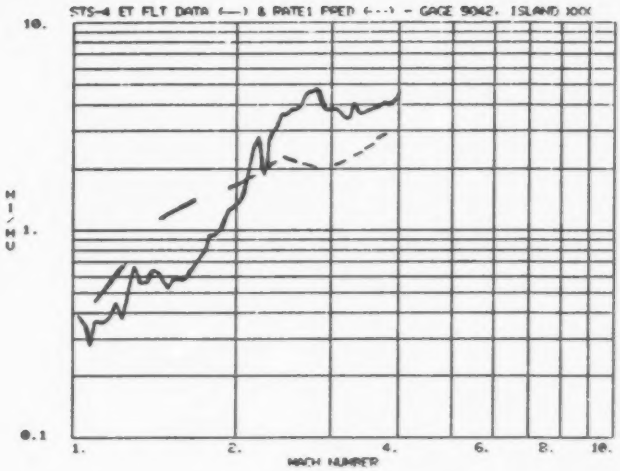


Fig. A.32d Aerothermal Analysis for Gage 9042 in STS-4

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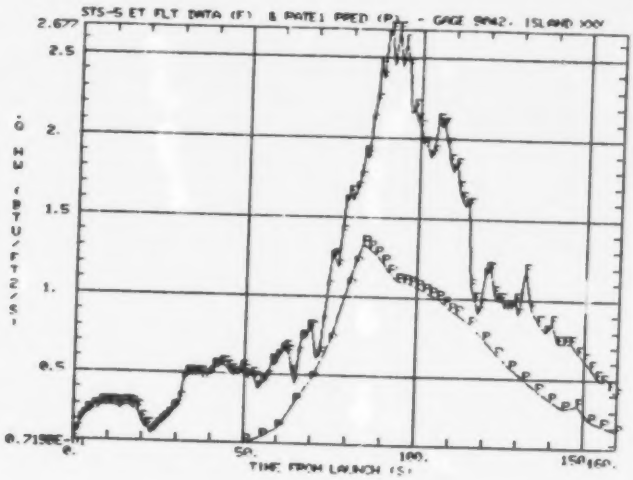


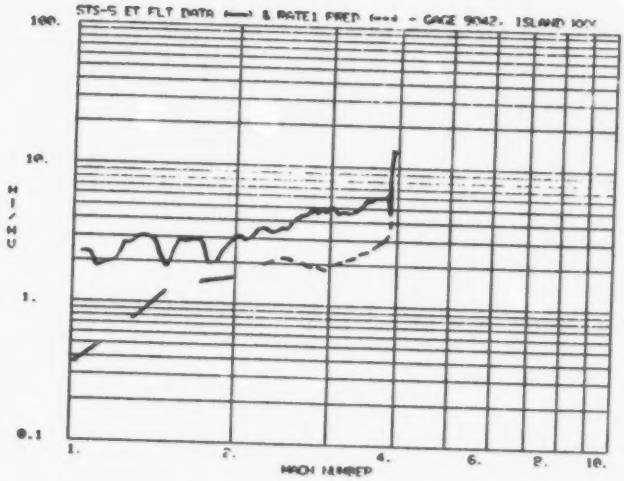
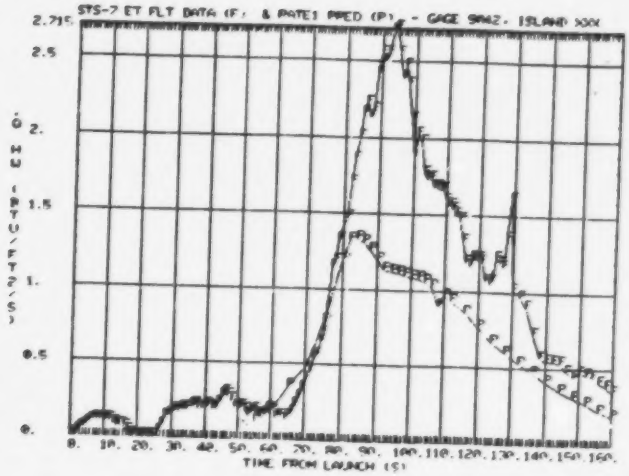


Fig. A.32e Aerothermal Analysis for Gage 9042 in STS-5



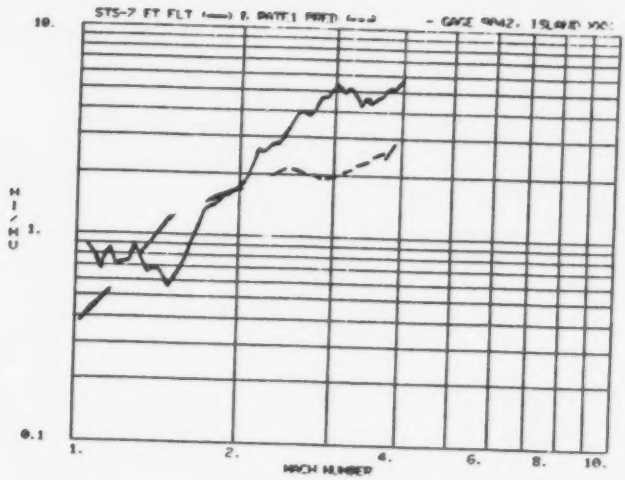


Fig. A.32f Aerothermal Analysis for Gage 9042 in STS-7

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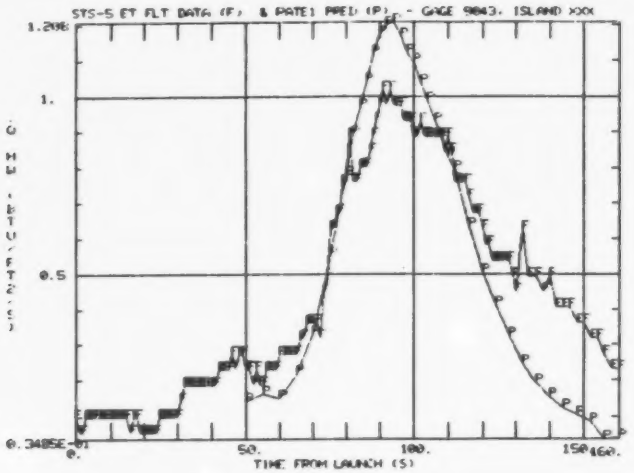

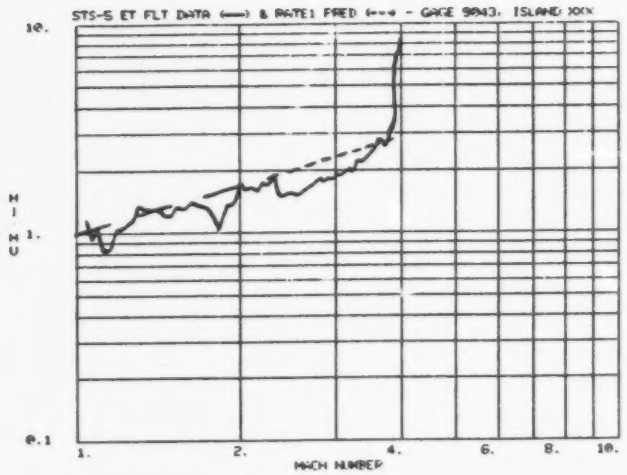

Fig. A.33a Aerothermal Analysis for Gage 9043 in STS-5

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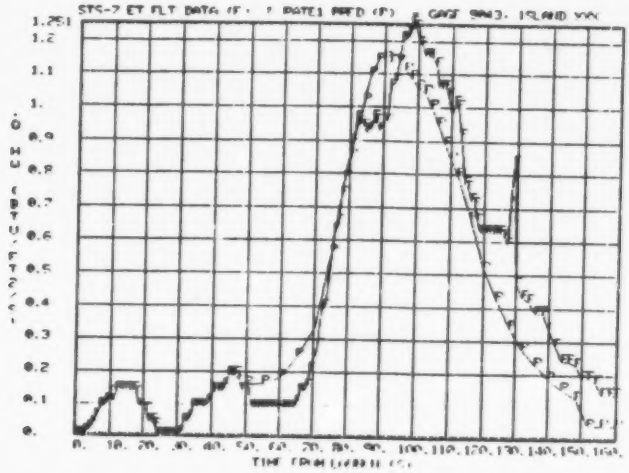


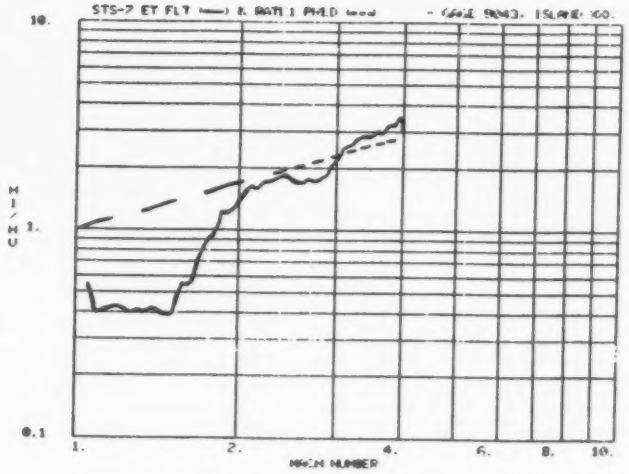
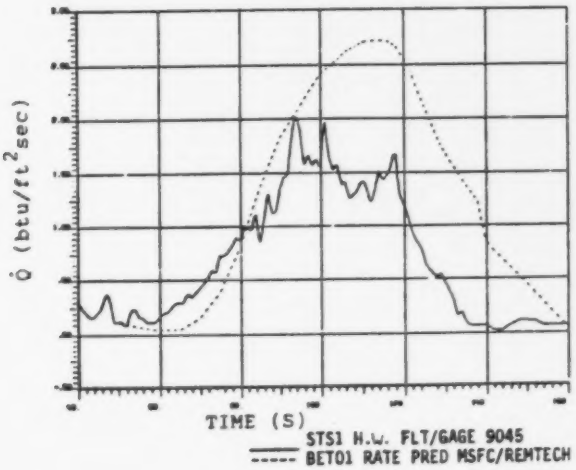


Fig. A.33b Aerothermal Analysis for Gage 9043 in STS-7



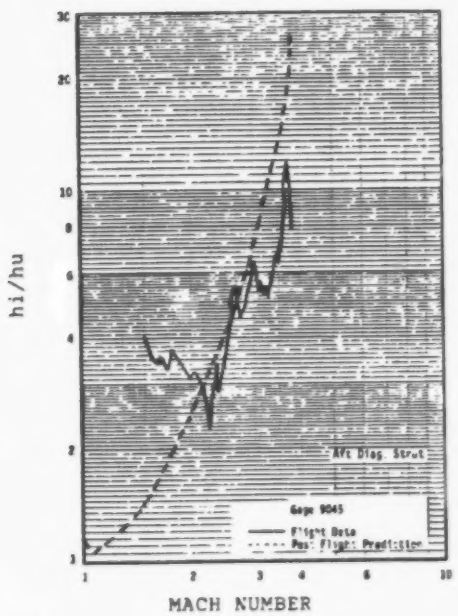


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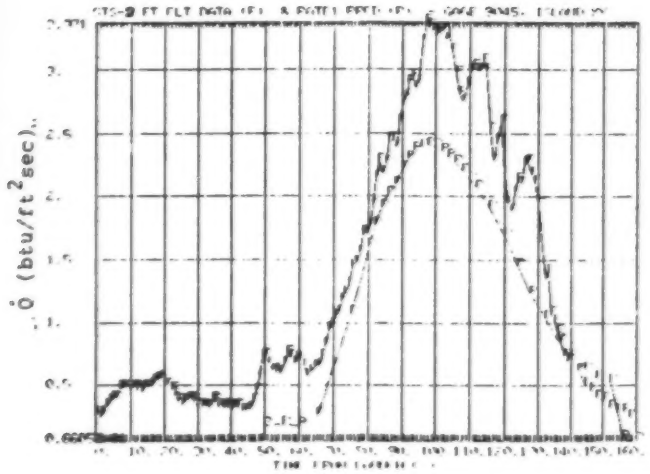
Fig. A.34a Aerothermal Analysis for Gage 9045 in STS-1



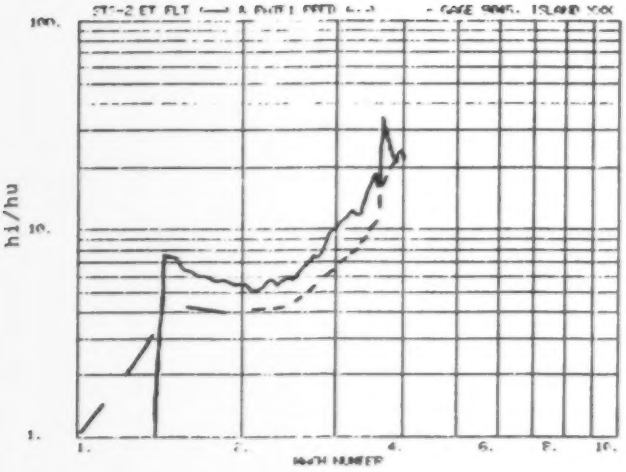
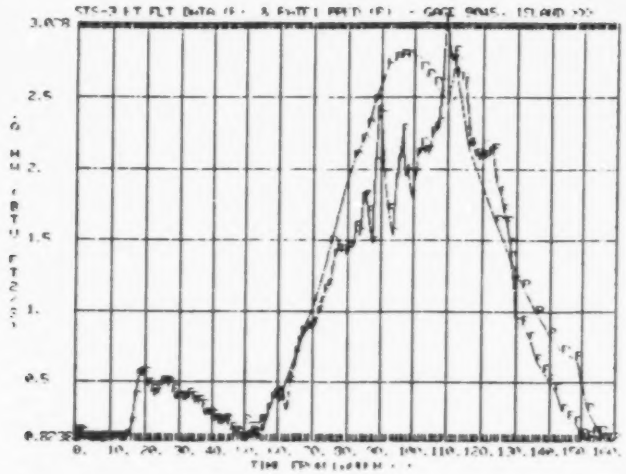


Fig. A.34b Aerothermal Analysis for Gage 9045 in STS-2



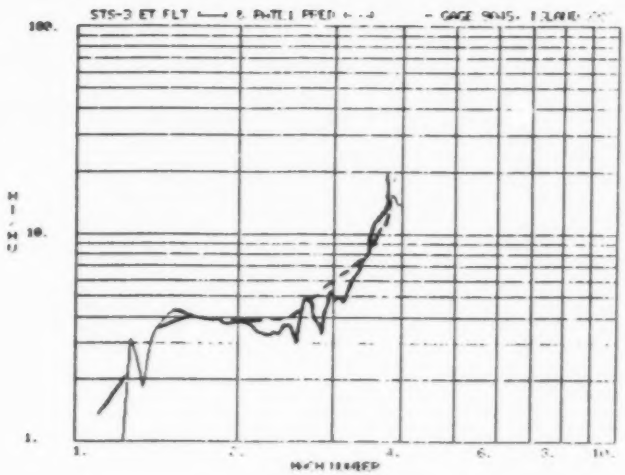
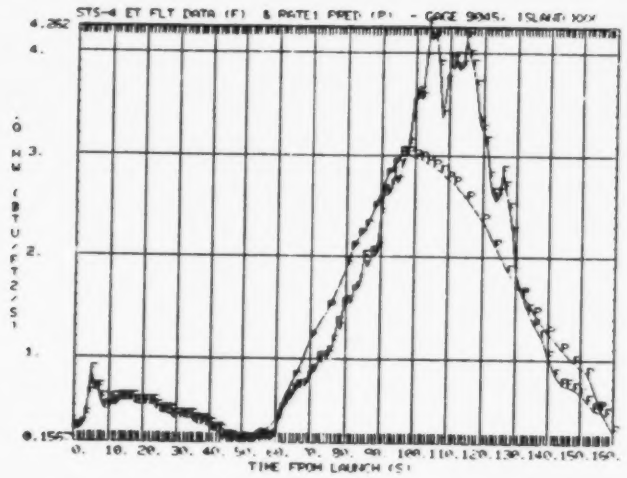


Fig. A.34c Aerothermal Analysis for Gage 9045 in STS-3



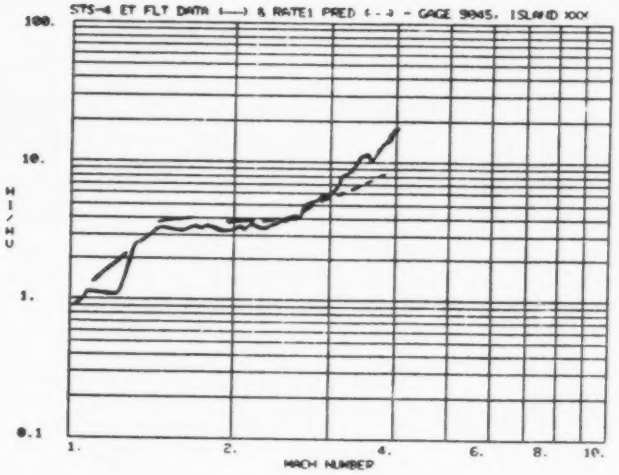


Fig. A.34d Aerothermal Analysis for Gage 9045 in STS-4

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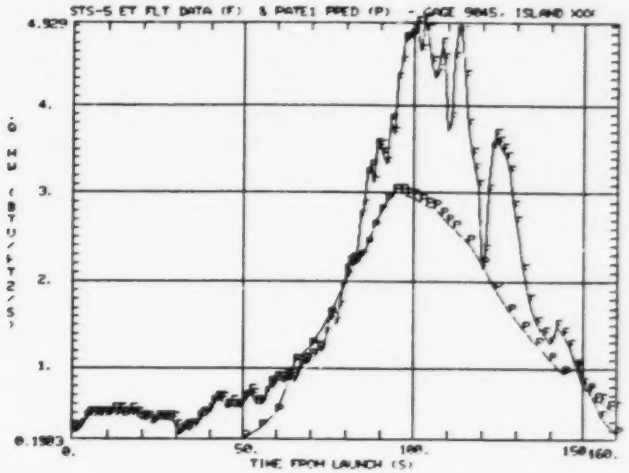


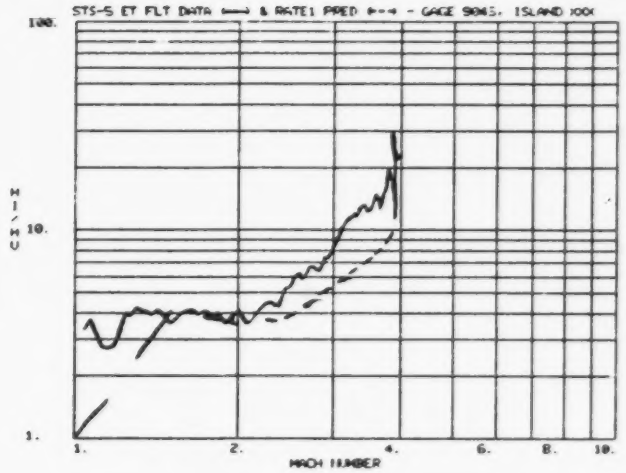
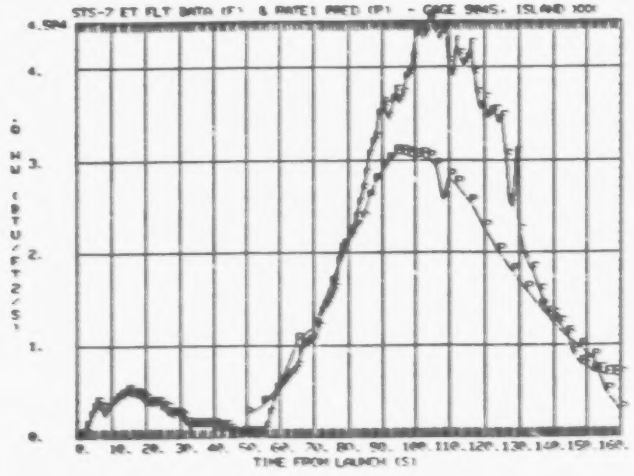


Fig. A.34e Aerothermal Analysis for Gage 9045 in STS-5



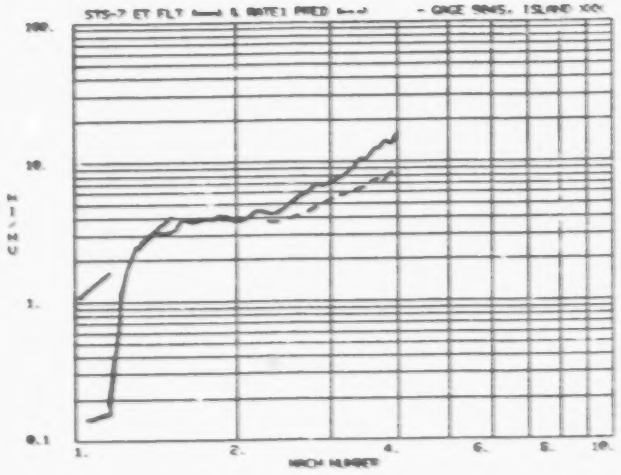


Fig. A.34f Aerothermal Analysis for Gage 9045 in STS-7

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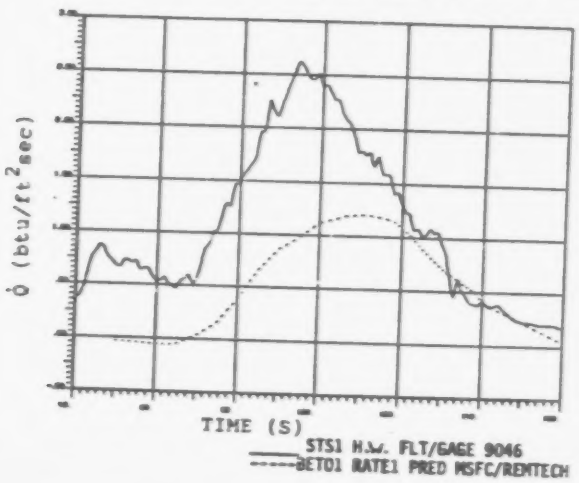

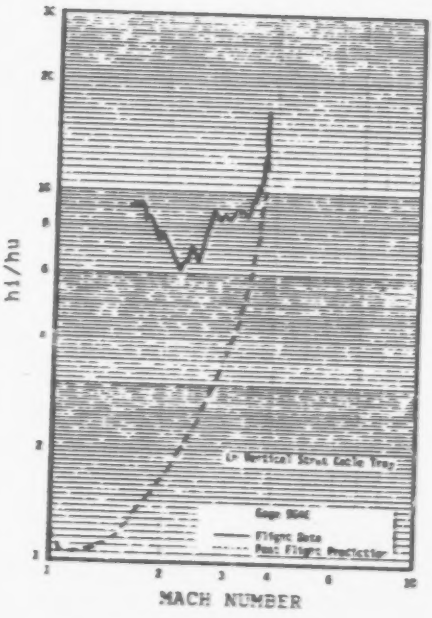

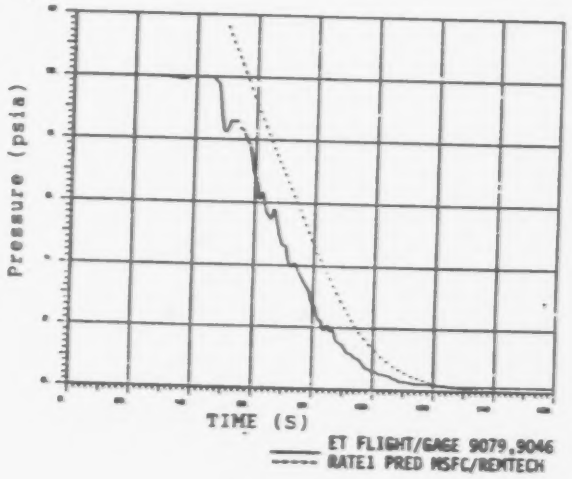

Fig. A.35a Aerothermal Analysis for Gage 9046 in STS-1

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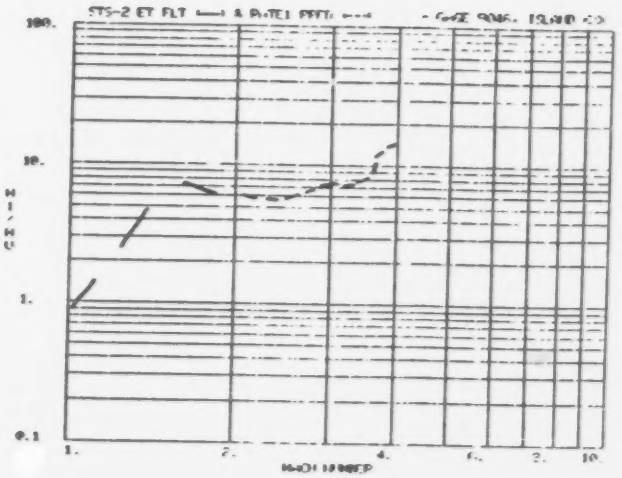

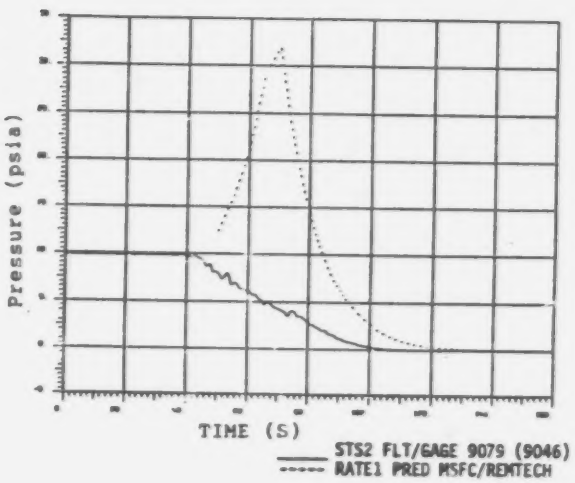

NOTE:
- Bad Heating Rate Measurements

Fig. A.35b Aerothermal Analysis for Gage 9046 in STS-2

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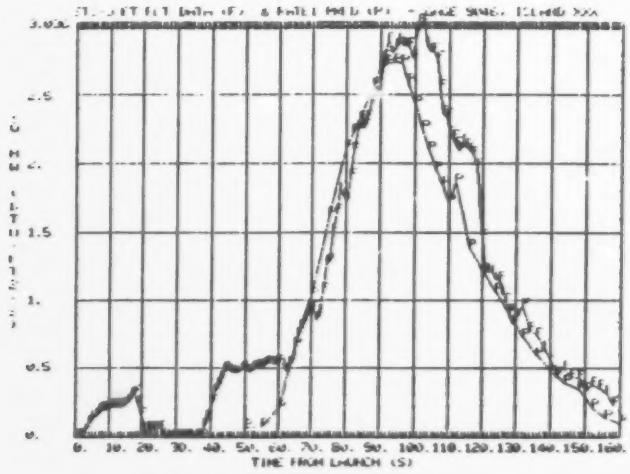

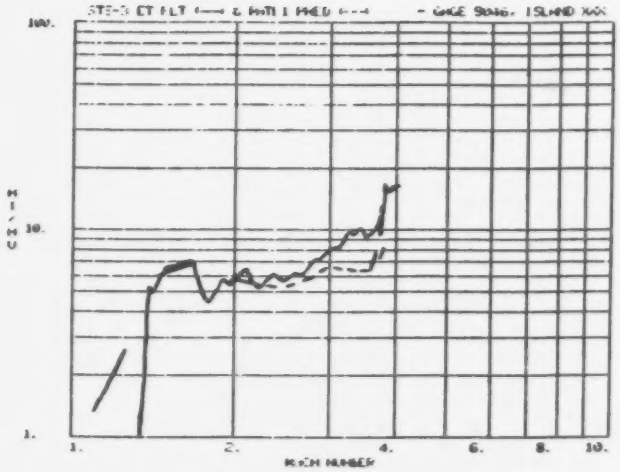

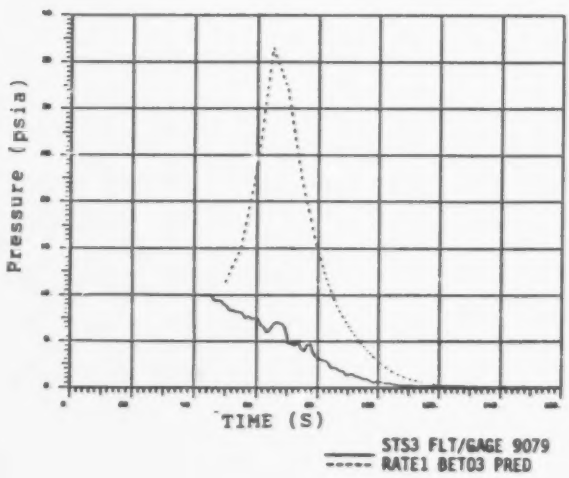

Fig. A.35c Aeroheating Analysis for Gage 9046 in STS-3

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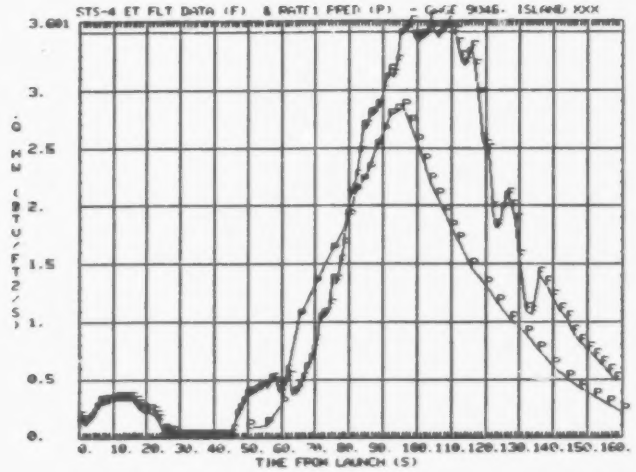
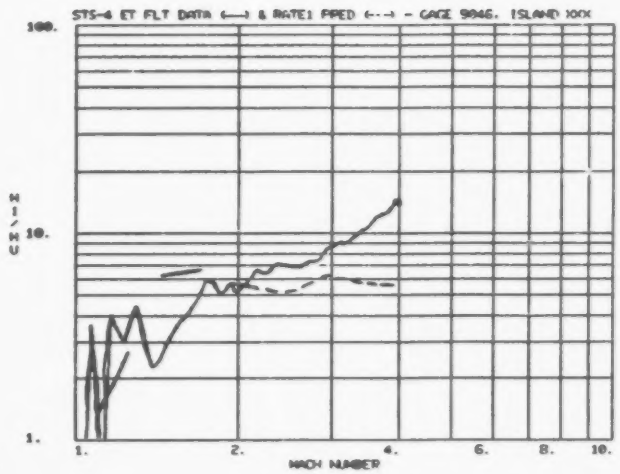




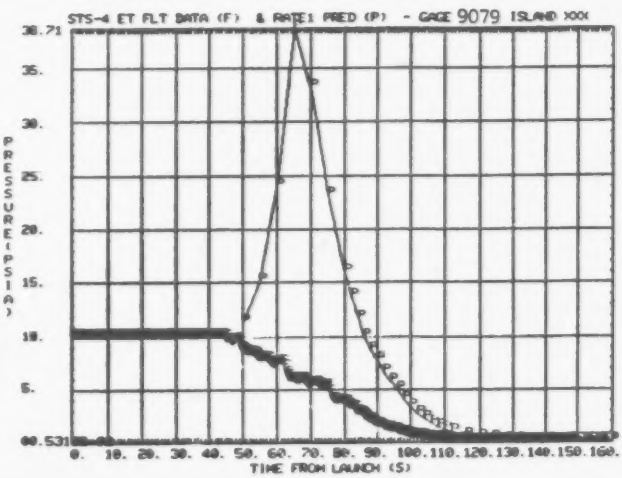
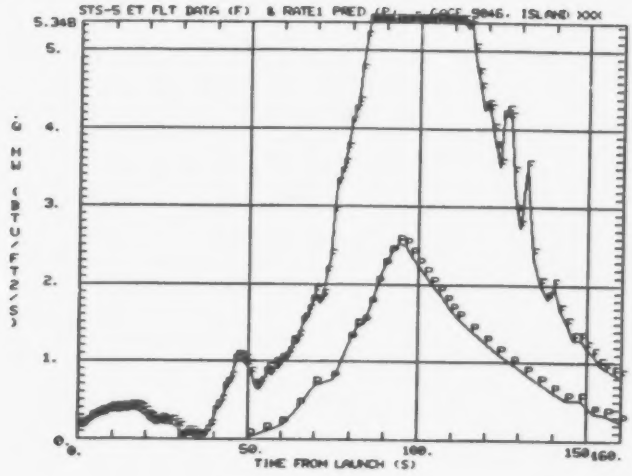
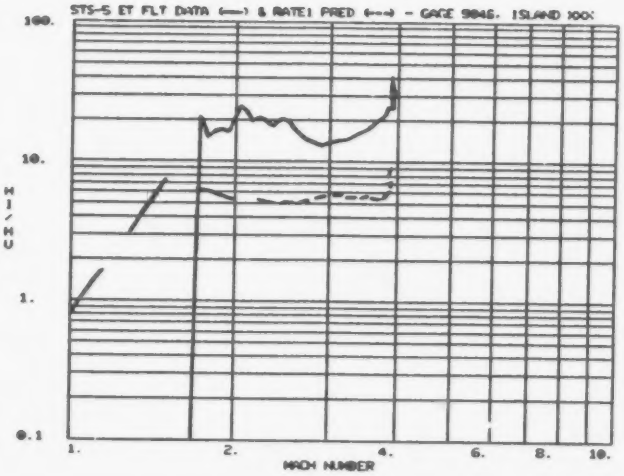


Fig. A.35d Aerothermal Analysis for Gage 9046 in STS-4





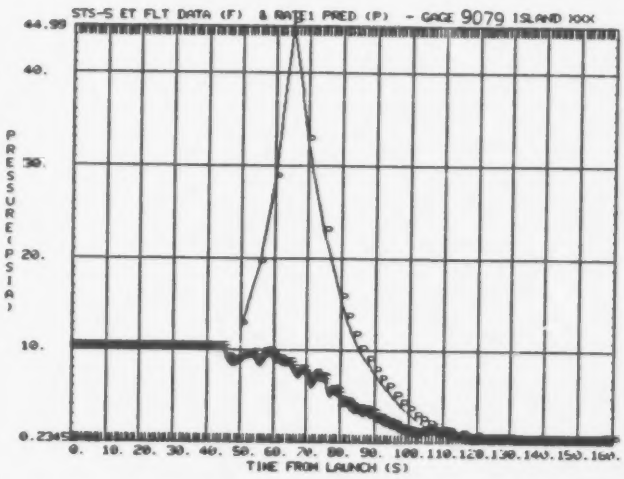


Fig. A.35e Aerothermal Analysis for Gage 9046 in STS-5

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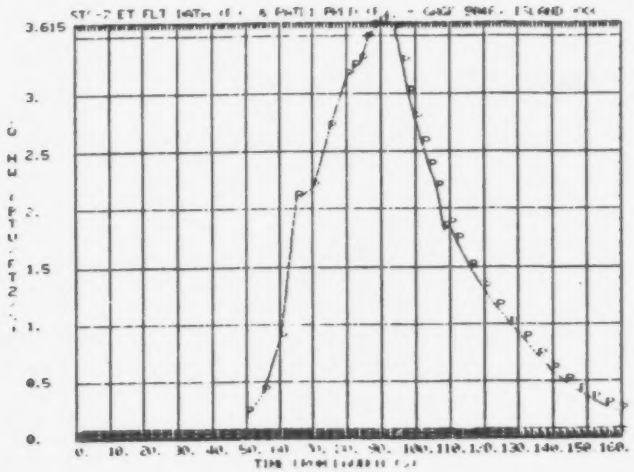

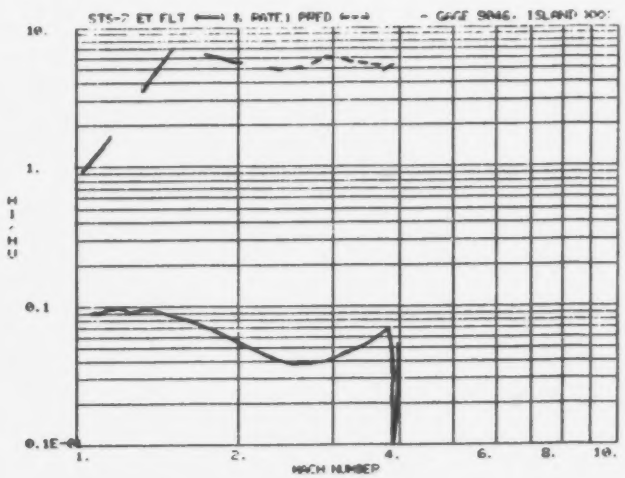

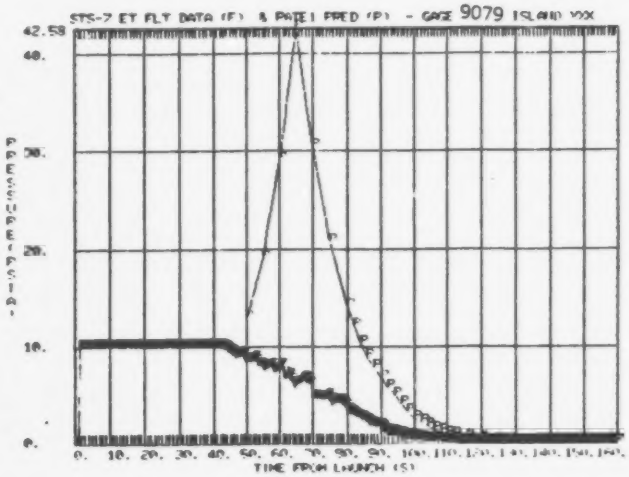

Fig. A.35f Aerothermal Analysis for Gage 9046 in STS-7

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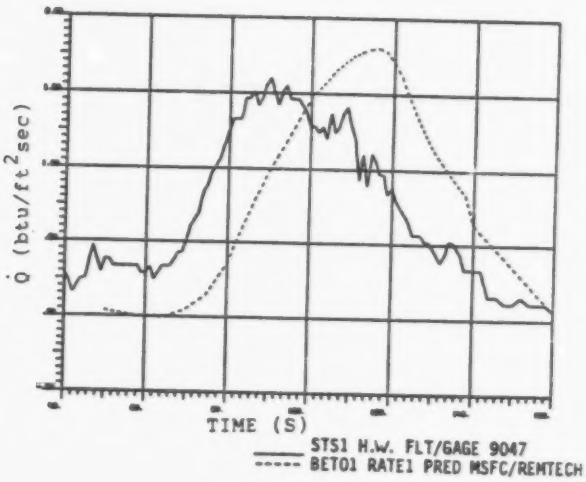
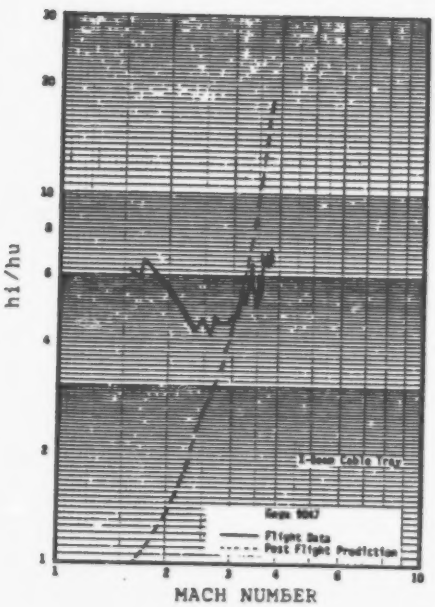




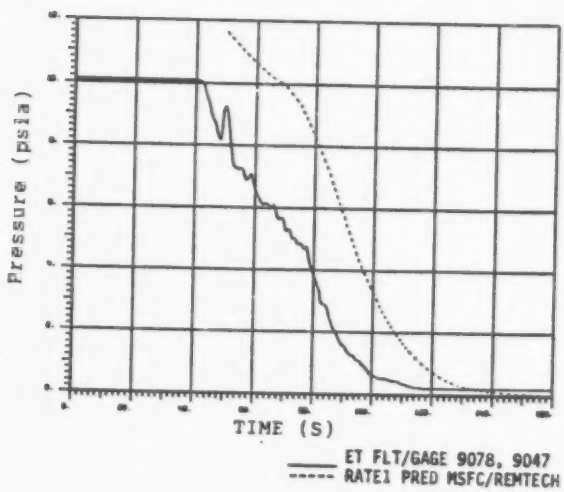
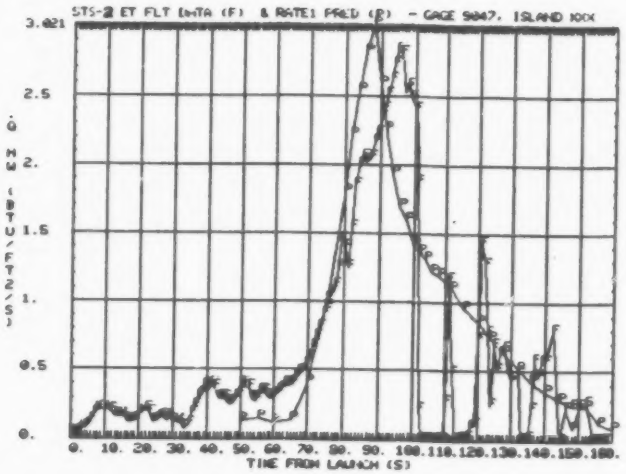
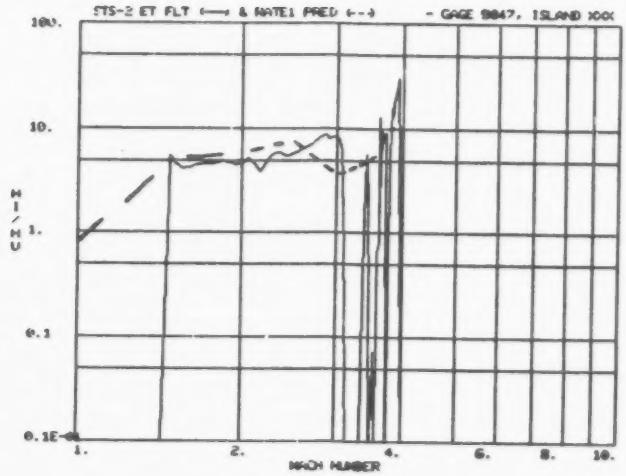


Fig. A.36a Aerothermal Analysis for Gage 9047 in STS-1





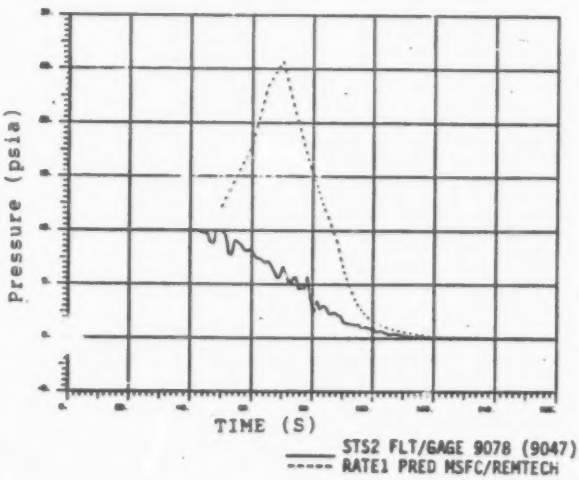
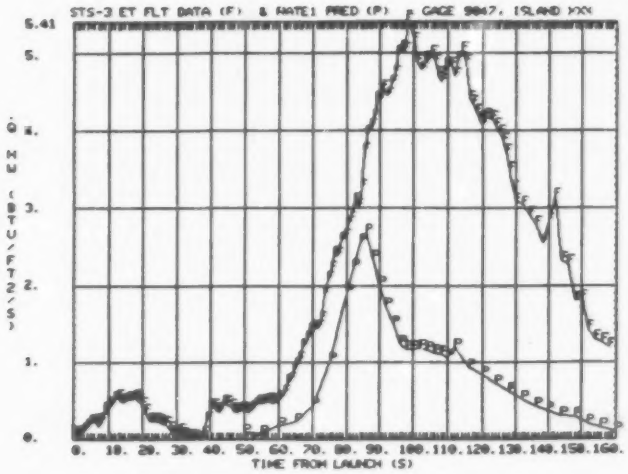
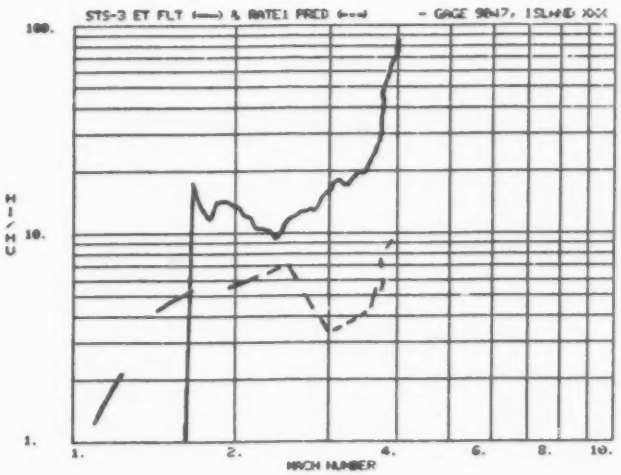
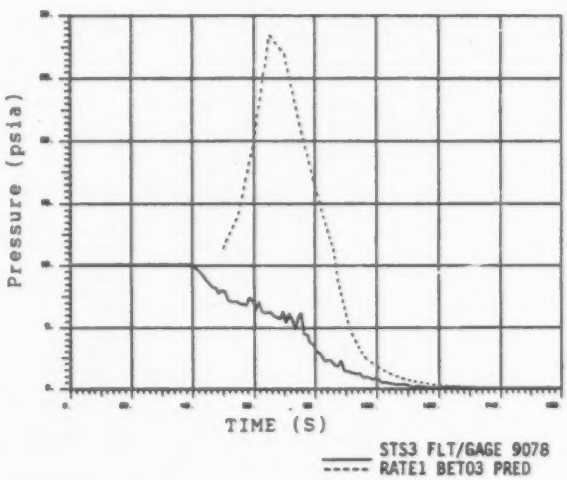


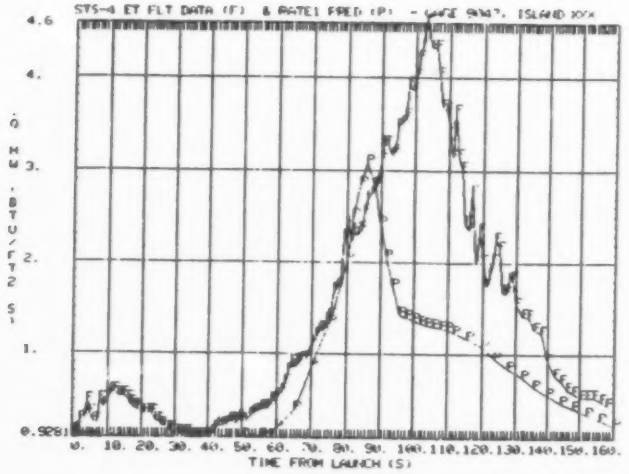
Fig. A.36b Aerothermal Analysis for Gage 9047 in STS-2

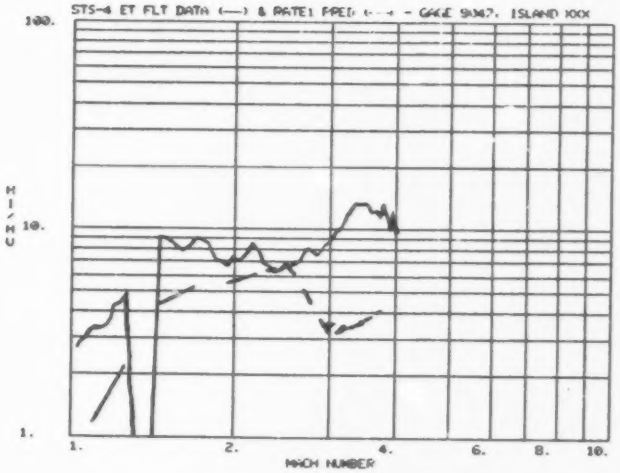






Fig, A.36c Aerothermal Analysis for Gage 9047 in STS-3





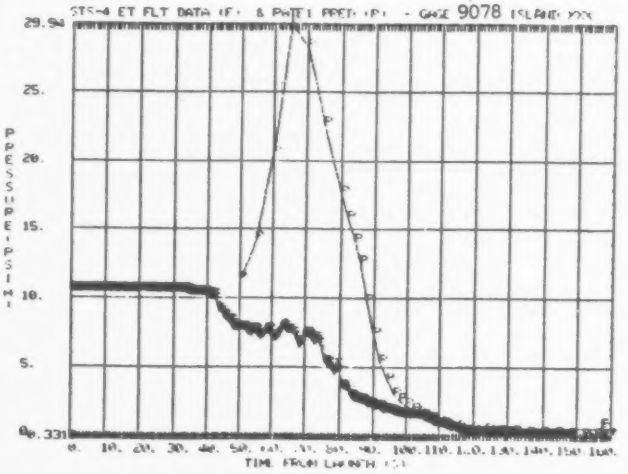


Fig. A.36d Aerothermal Analysis for Gage 9047 in STS-4

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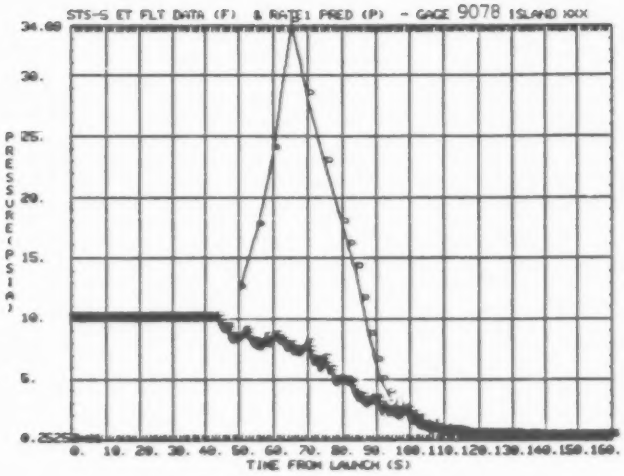
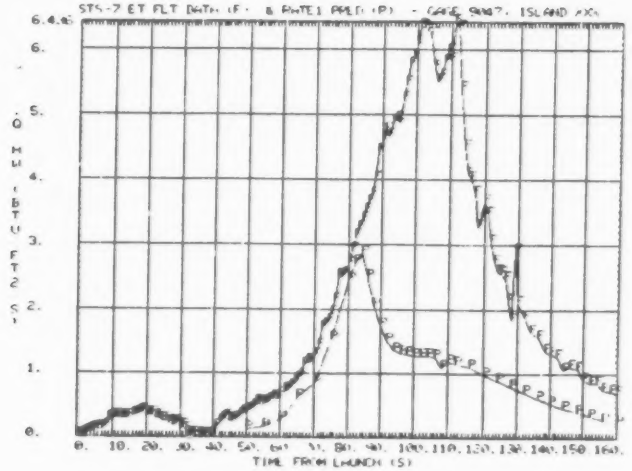
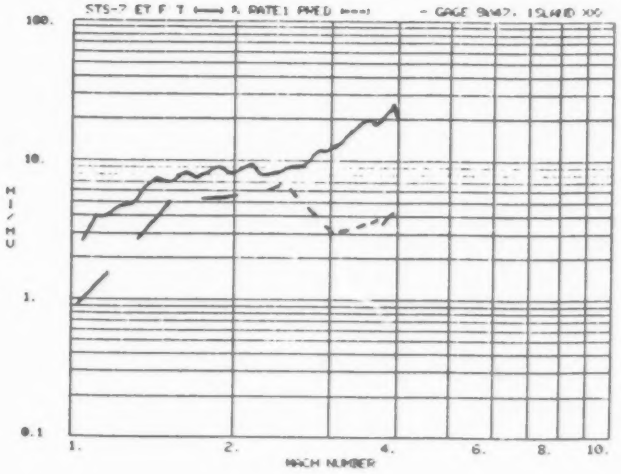


Fig. A.36e Aerothermal Analysis for Gage 9047 in STS-5





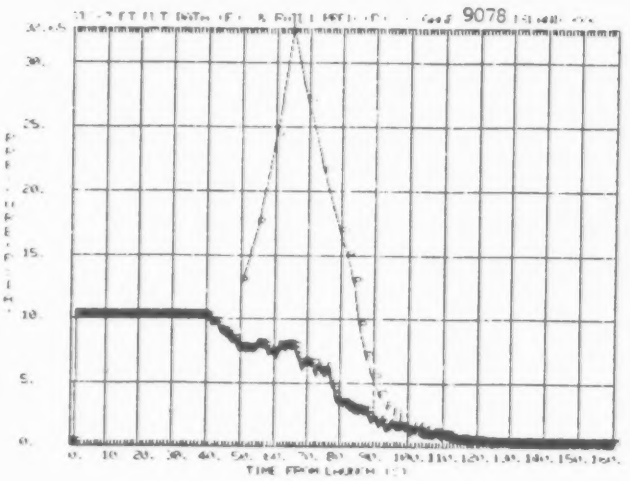


Fig. A.36f Aerothermal Analysis for Gage 9047 in STS-7

APPENDIX B

FLIGHT-DERIVED hi/hu VS. M_∞ PLOTS

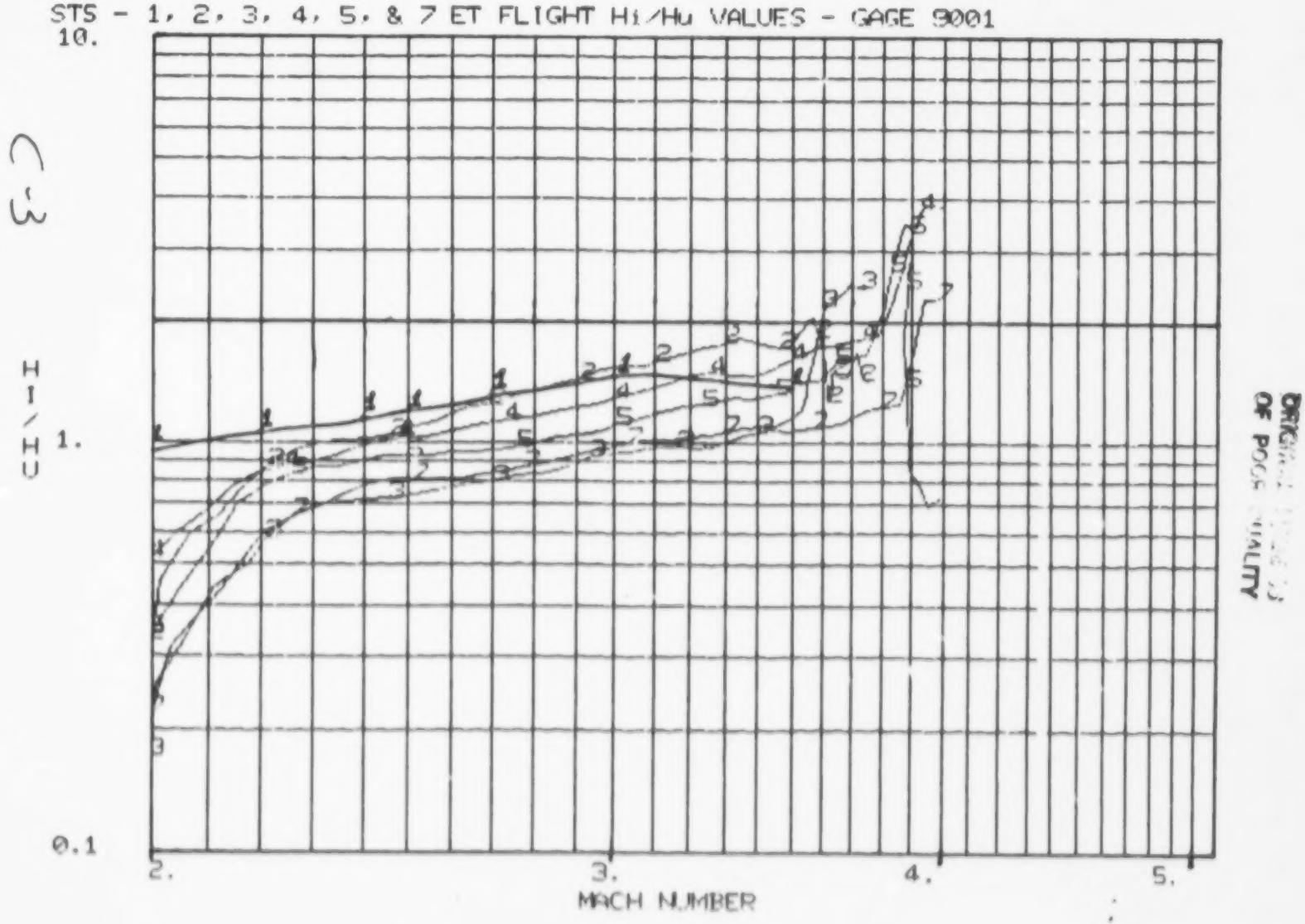


Fig. B.1 Flight-derived $\frac{h_i}{h_u}$ vs. M_∞ for Gage 9001

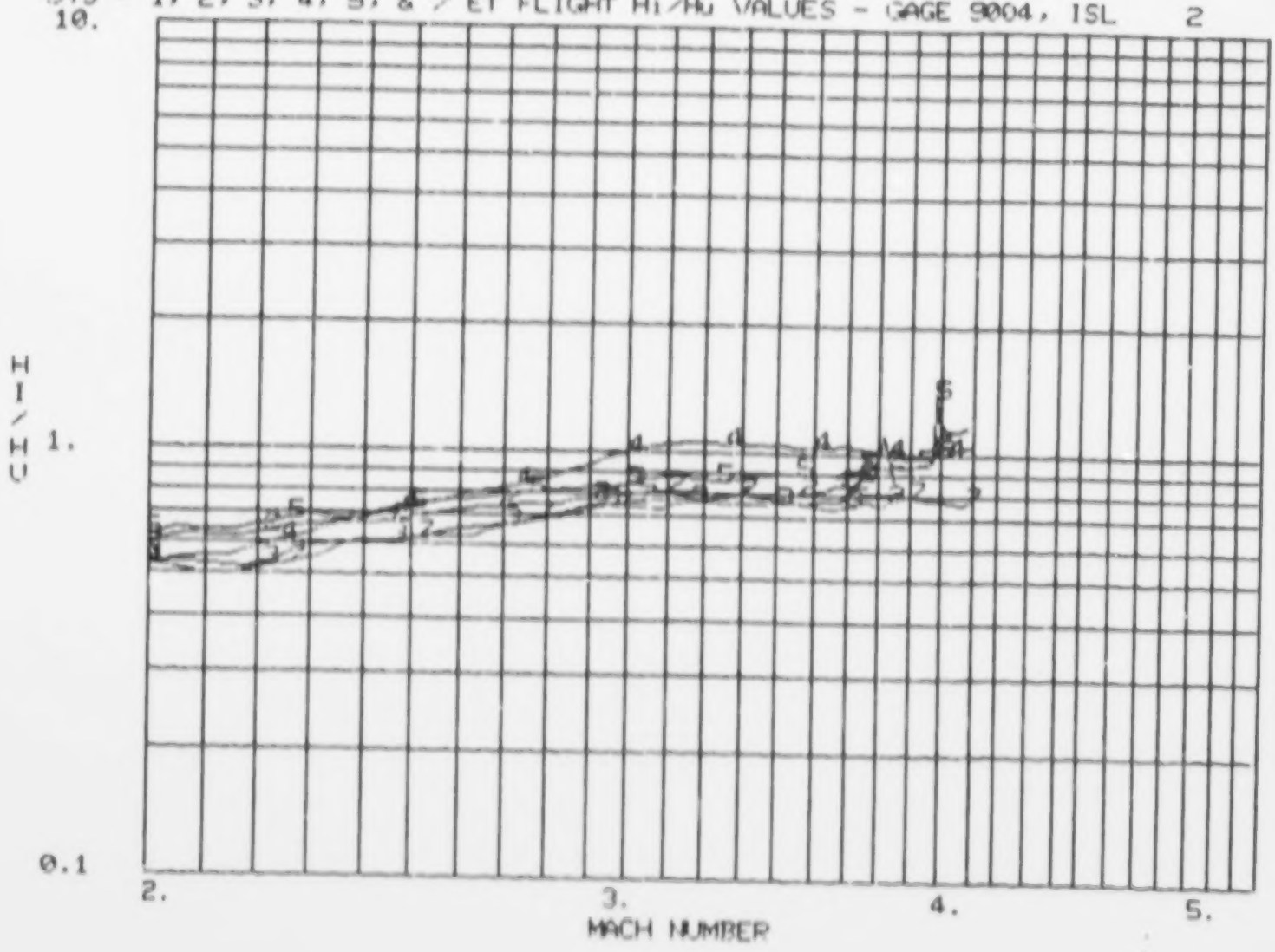


Fig. B.2 Flight-derived $\frac{h_l}{h_u}$ vs. M_∞ for Gage 9004

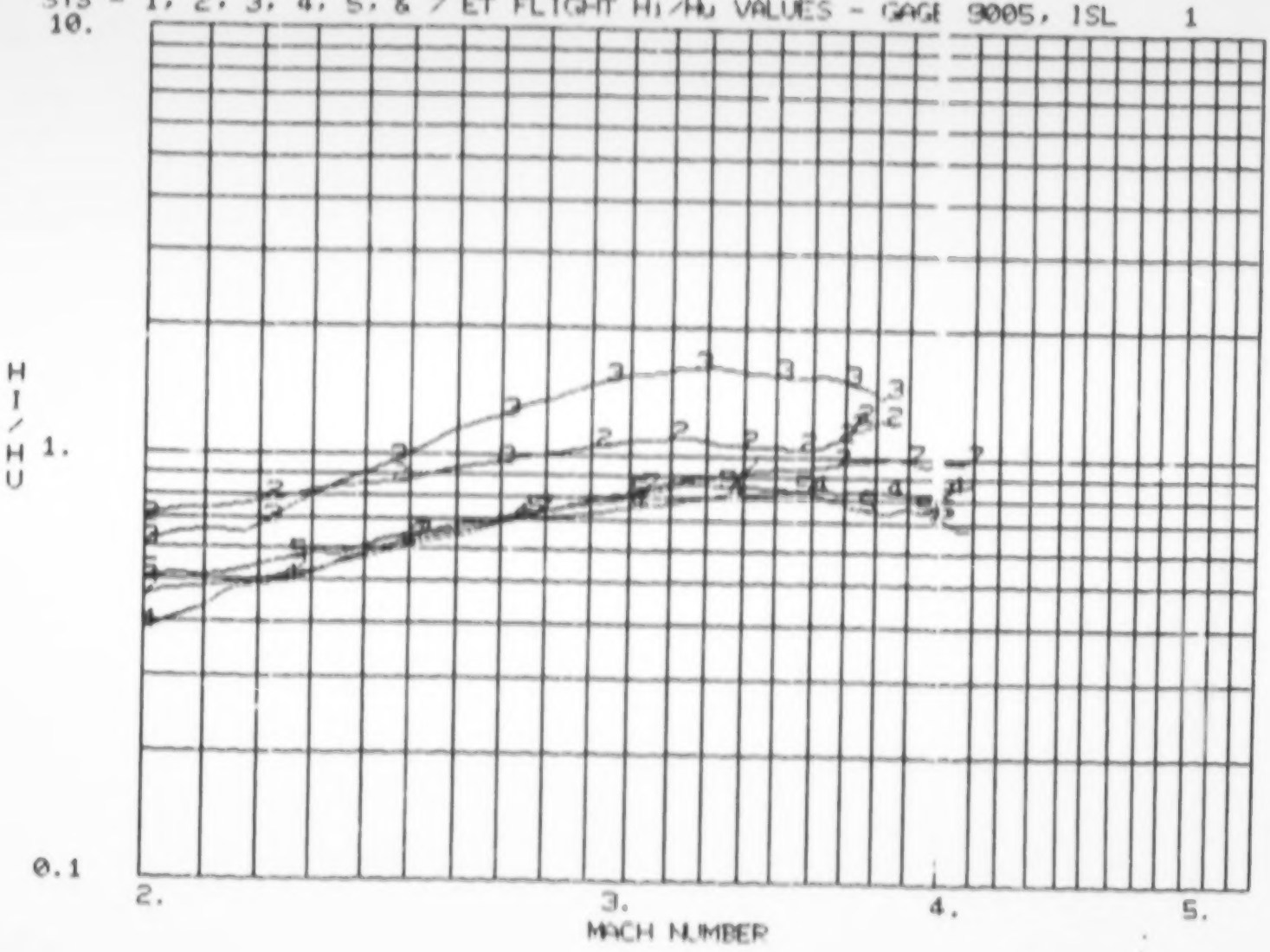


Fig. B.3 Flight-derived $\frac{h_l}{h_u}$ vs. M_∞ for Gage 9005

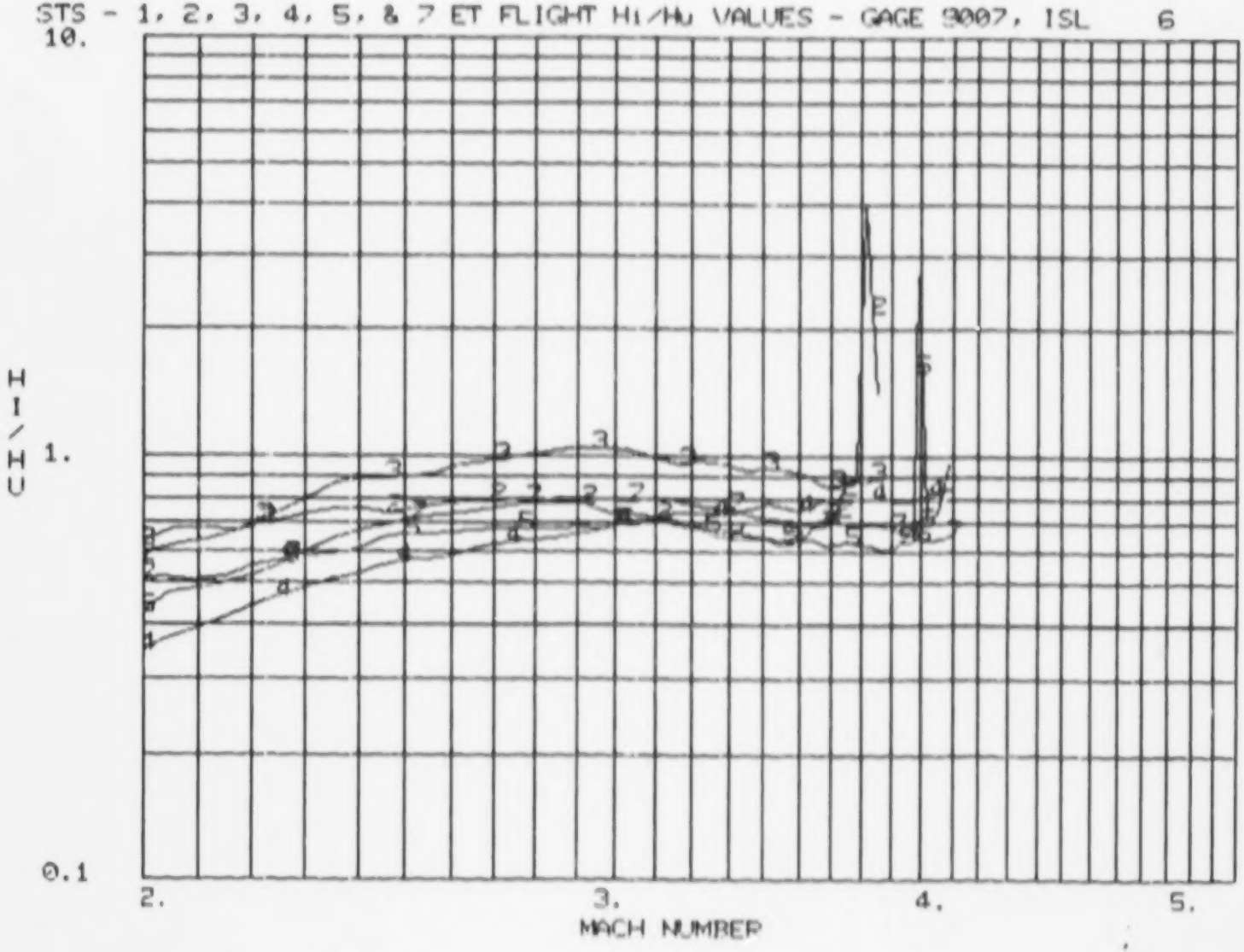


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Fig. B.4 Flight-derived $\frac{h_i}{h_u}$ vs. M_∞ for Gage 9007

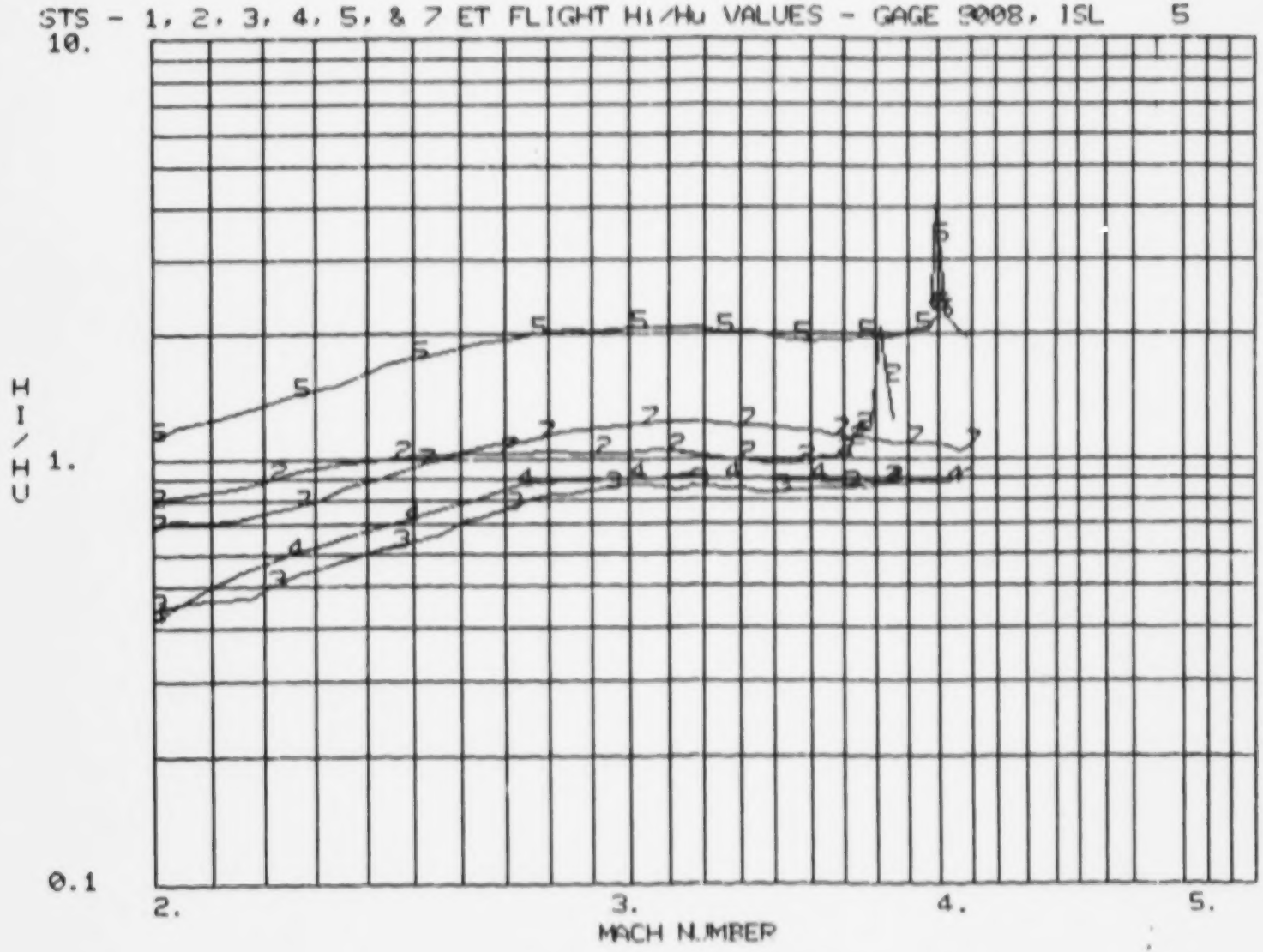

Fig. B.5 Flight-derived $\frac{h_i}{h_u}$ vs. M_∞ for Gage 9008

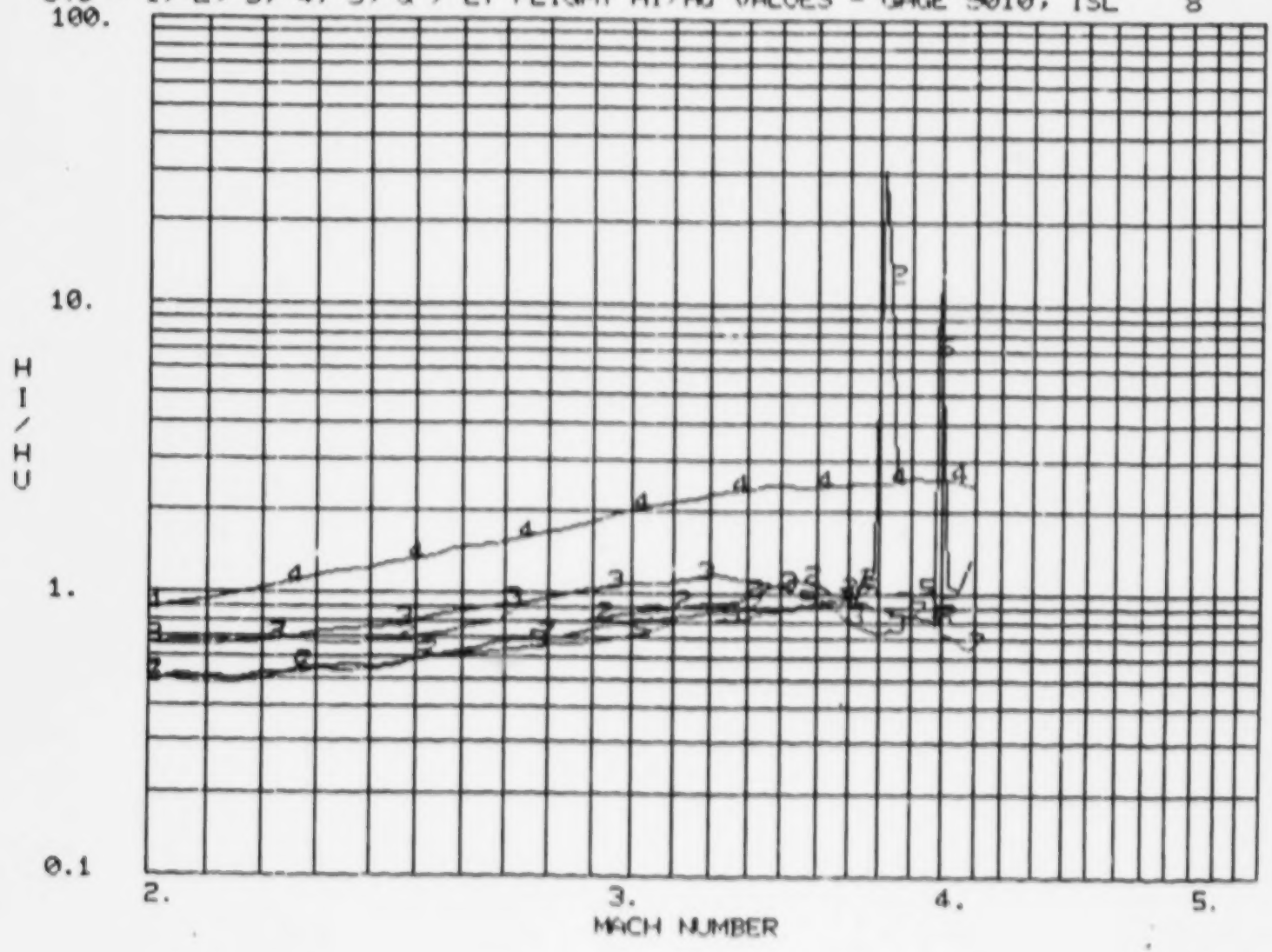

Fig. B.6 Flight-derived $\frac{h_i}{h_u}$ vs. M_∞ for Gage 9010

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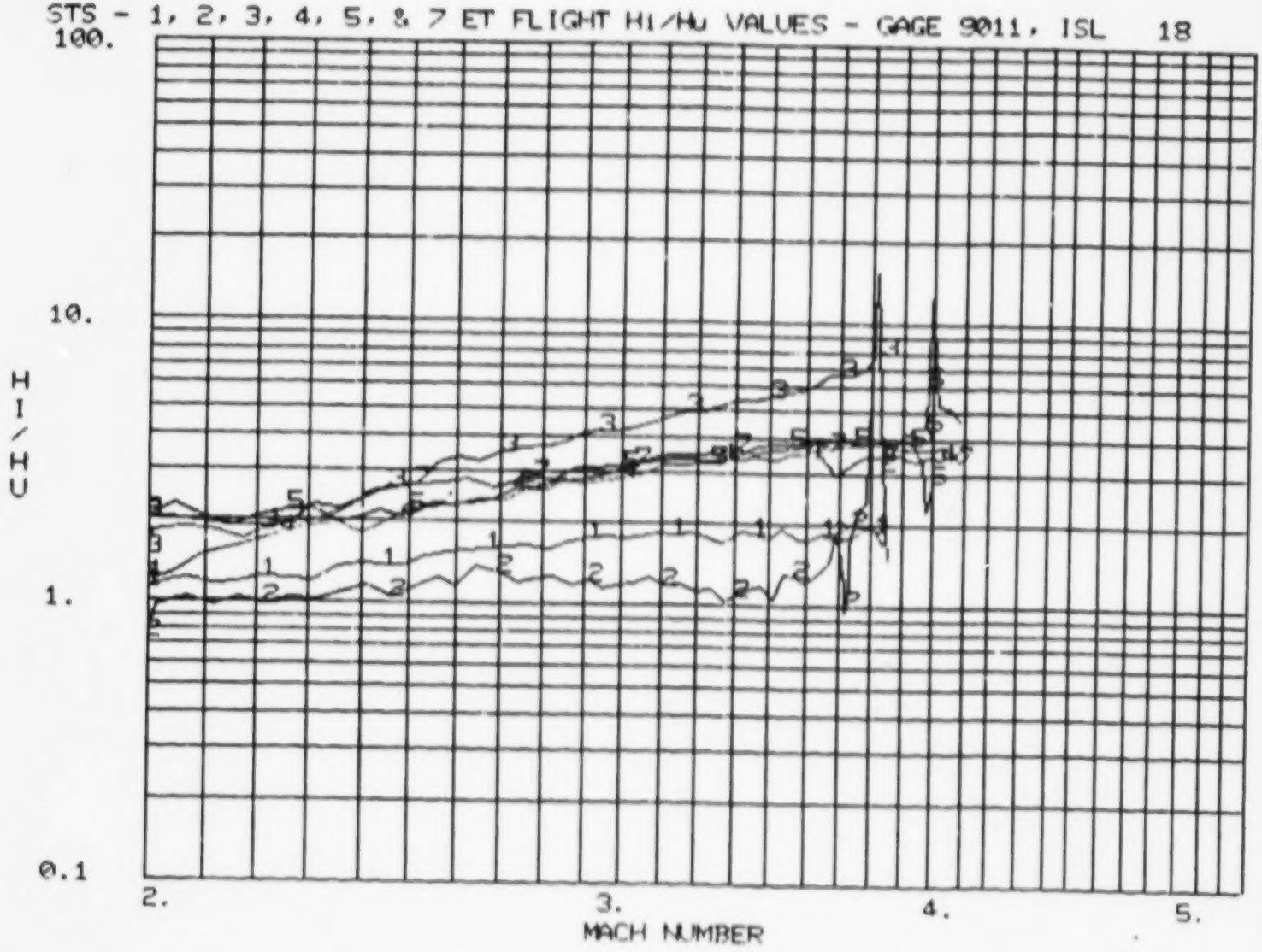

Fig. B.7 Flight-derived $\frac{h_l}{h_u}$ vs. M_∞ for Gage 9011

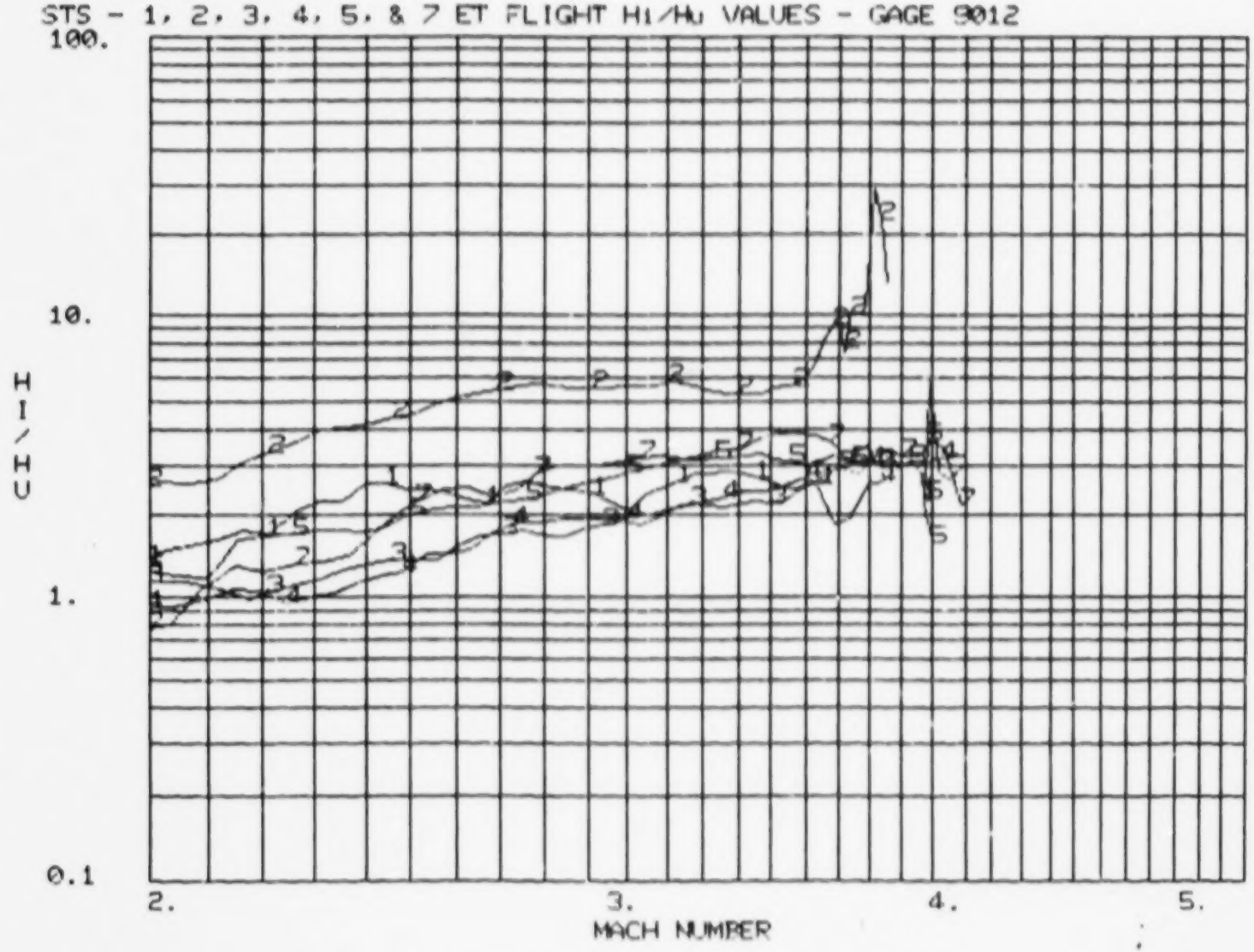

Fig. B.8 Flight-derived $\frac{h_l}{h_u}$ vs. M_∞ for Gage 9012

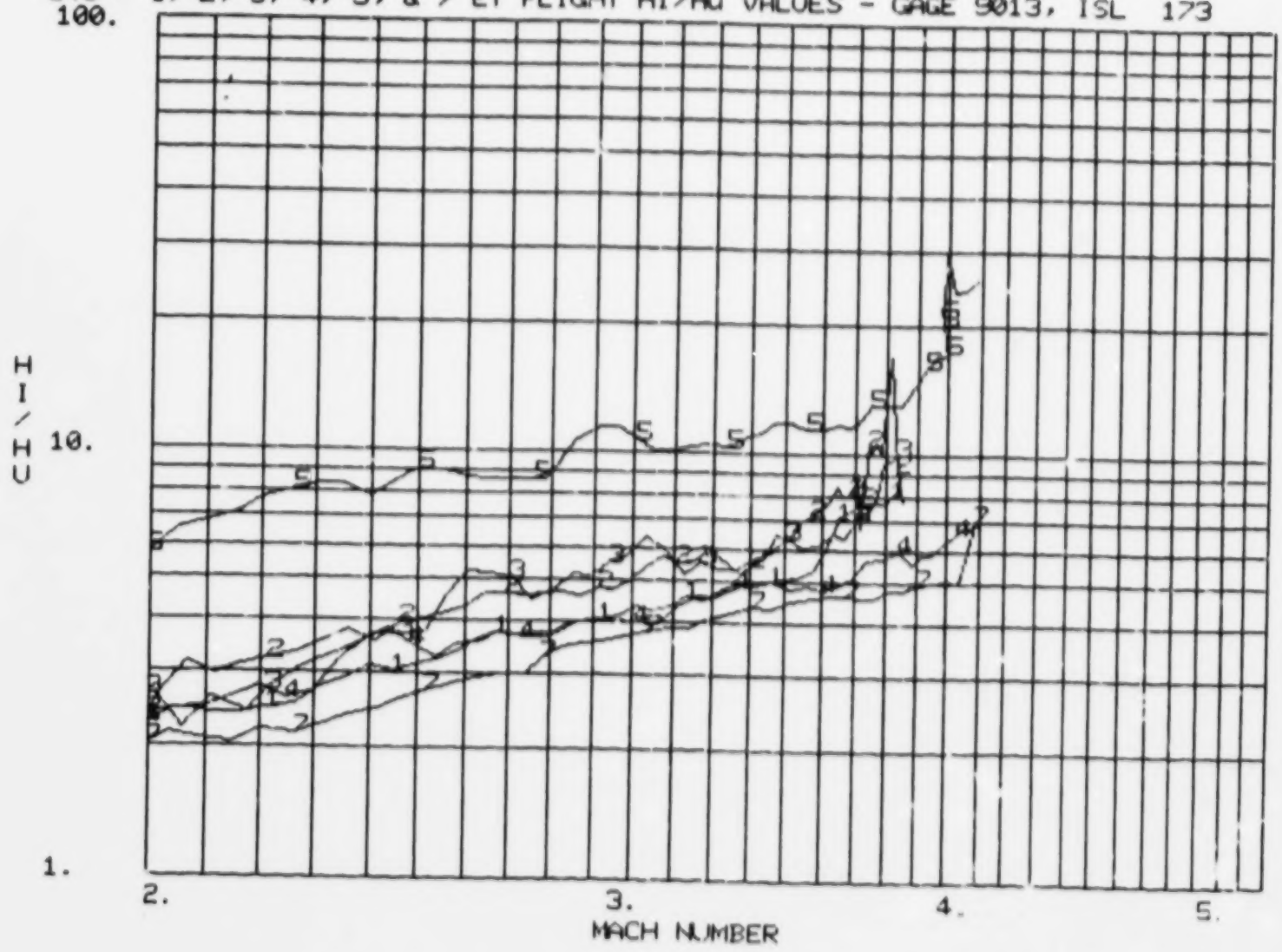

Fig. B.9 Flight-derived $\frac{h_i}{h_u}$ vs. M_∞ for Gage 9013

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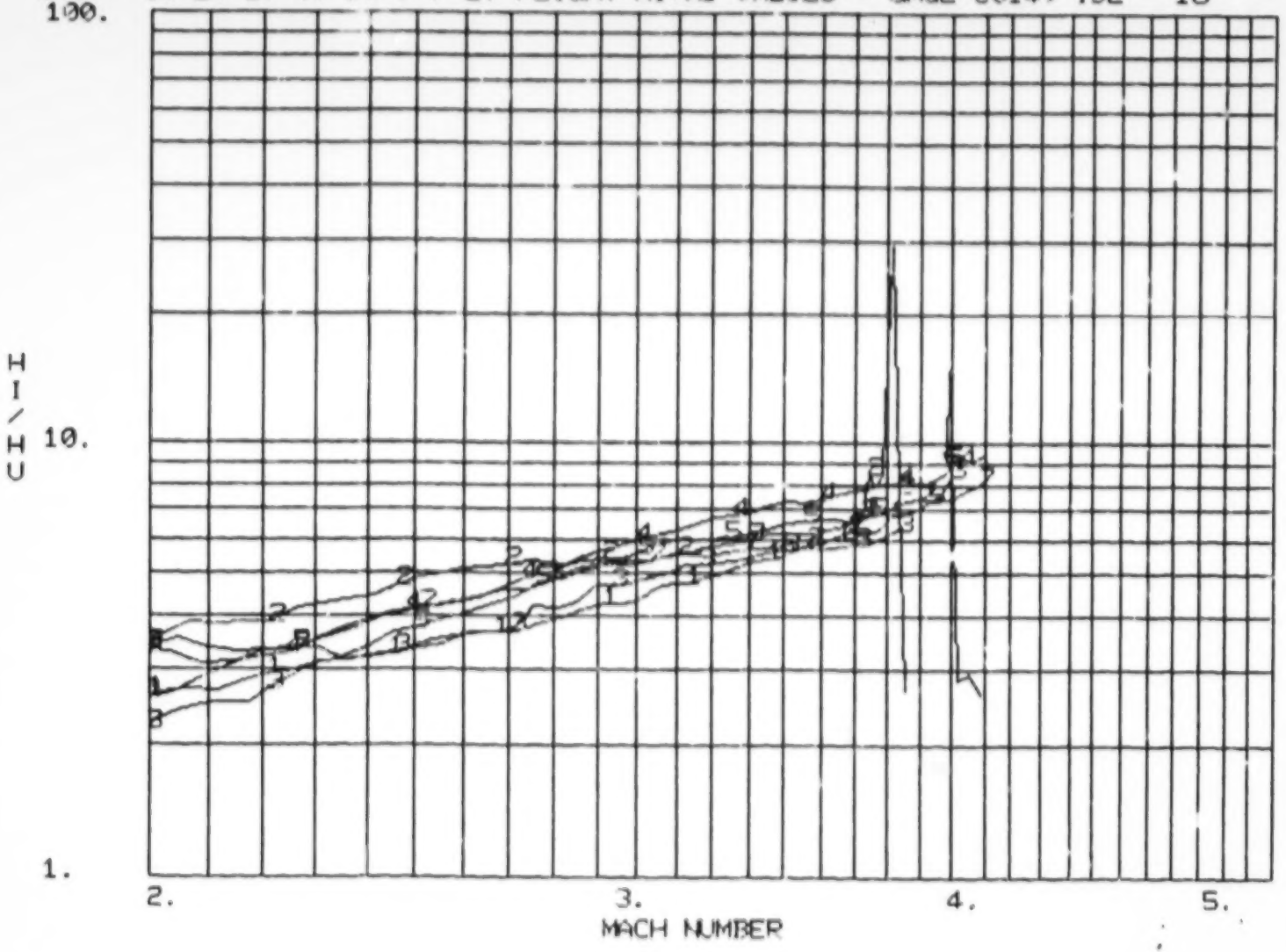

Fig. B.10 Flight-derived $\frac{h_i}{h_u}$ vs. M_∞ for Gage 9014

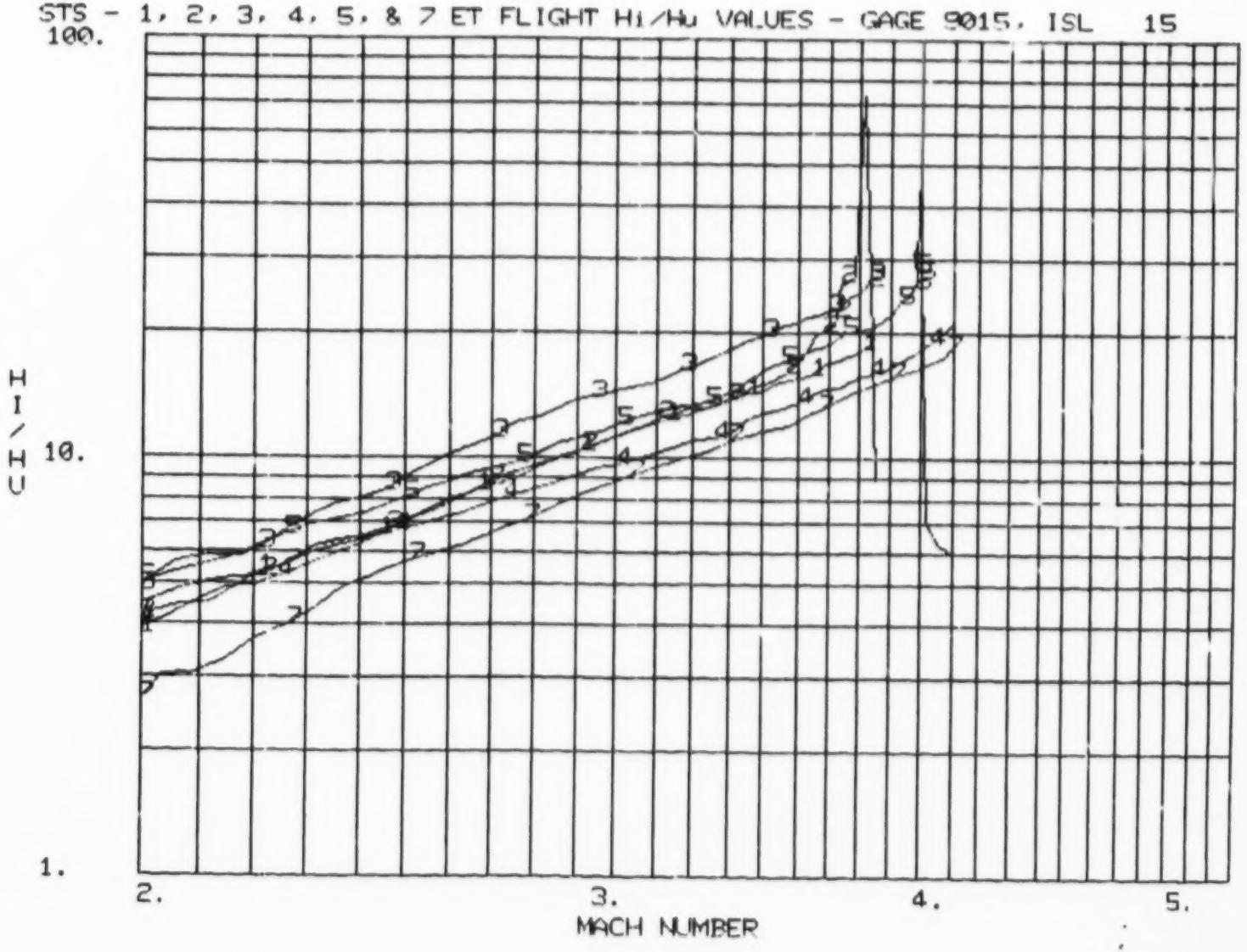

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Fig. B.11 Flight-derived $\frac{h_i}{h_u}$ vs. M_∞ for Gage 9015

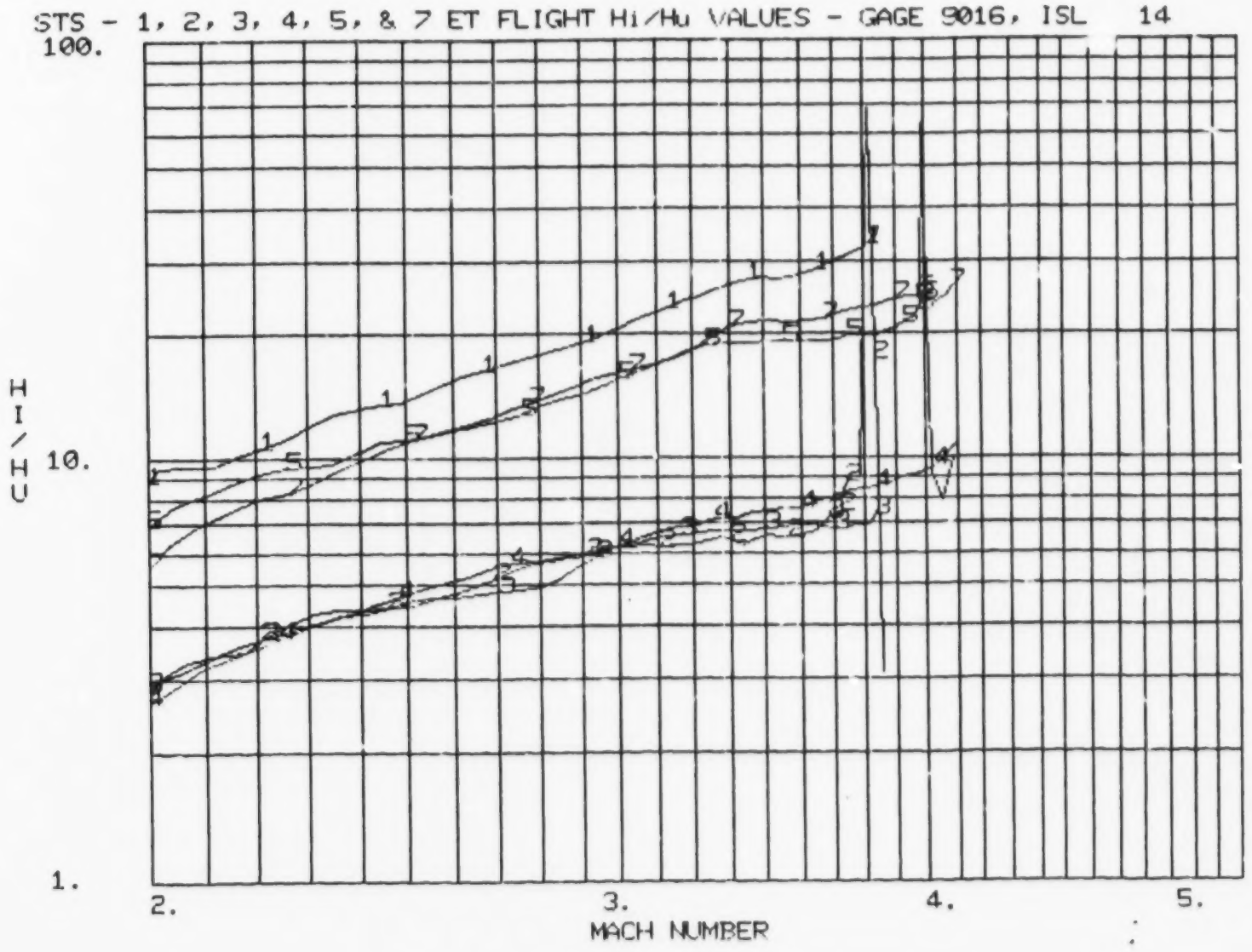

Fig. B.12 Flight-derived $\frac{h_i}{h_u}$ vs. M_∞ for Gage 9016

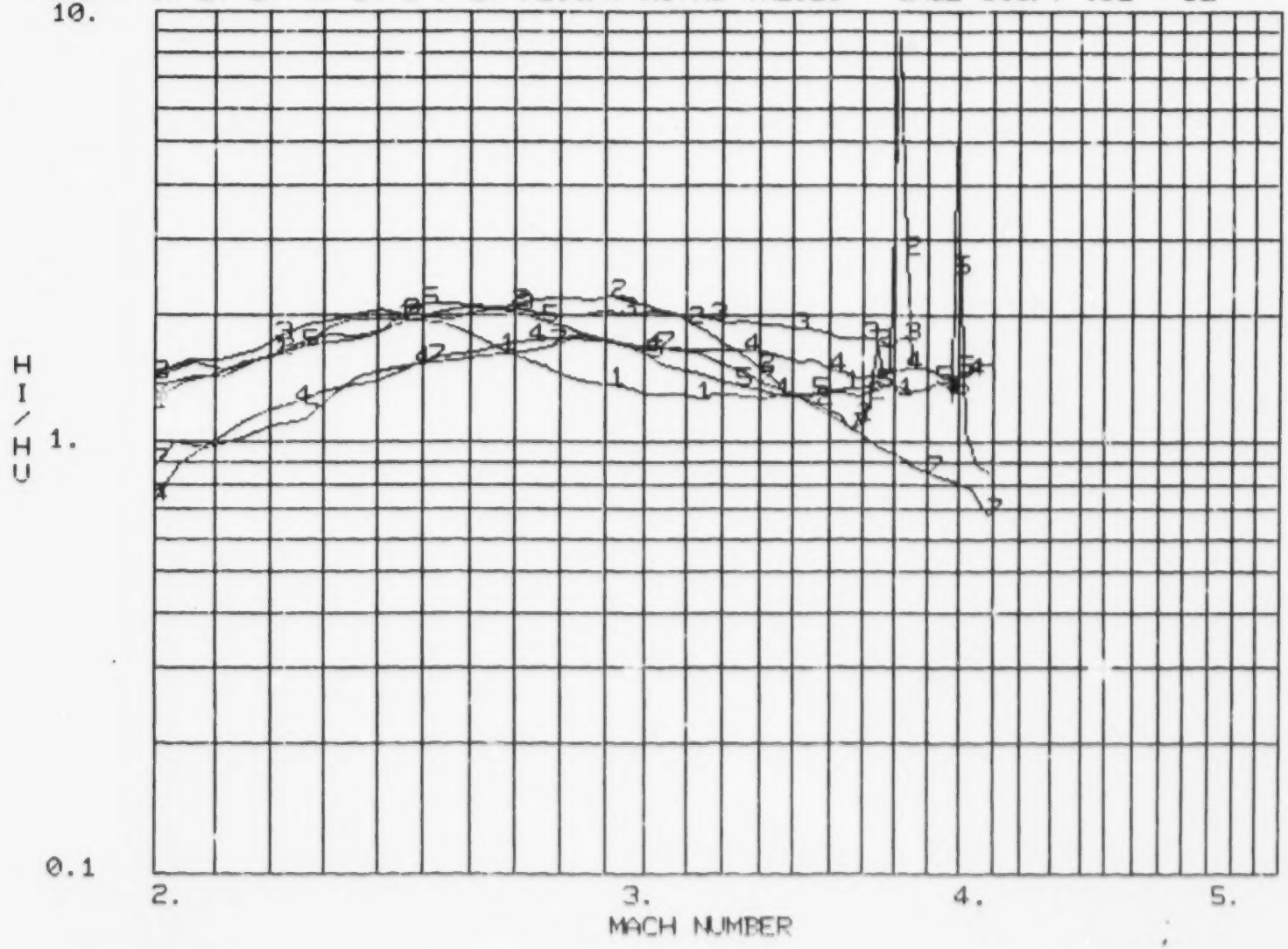

Fig. B.13 Flight-derived $\frac{h_i}{h_u}$ vs. M_∞ for Gage 9017

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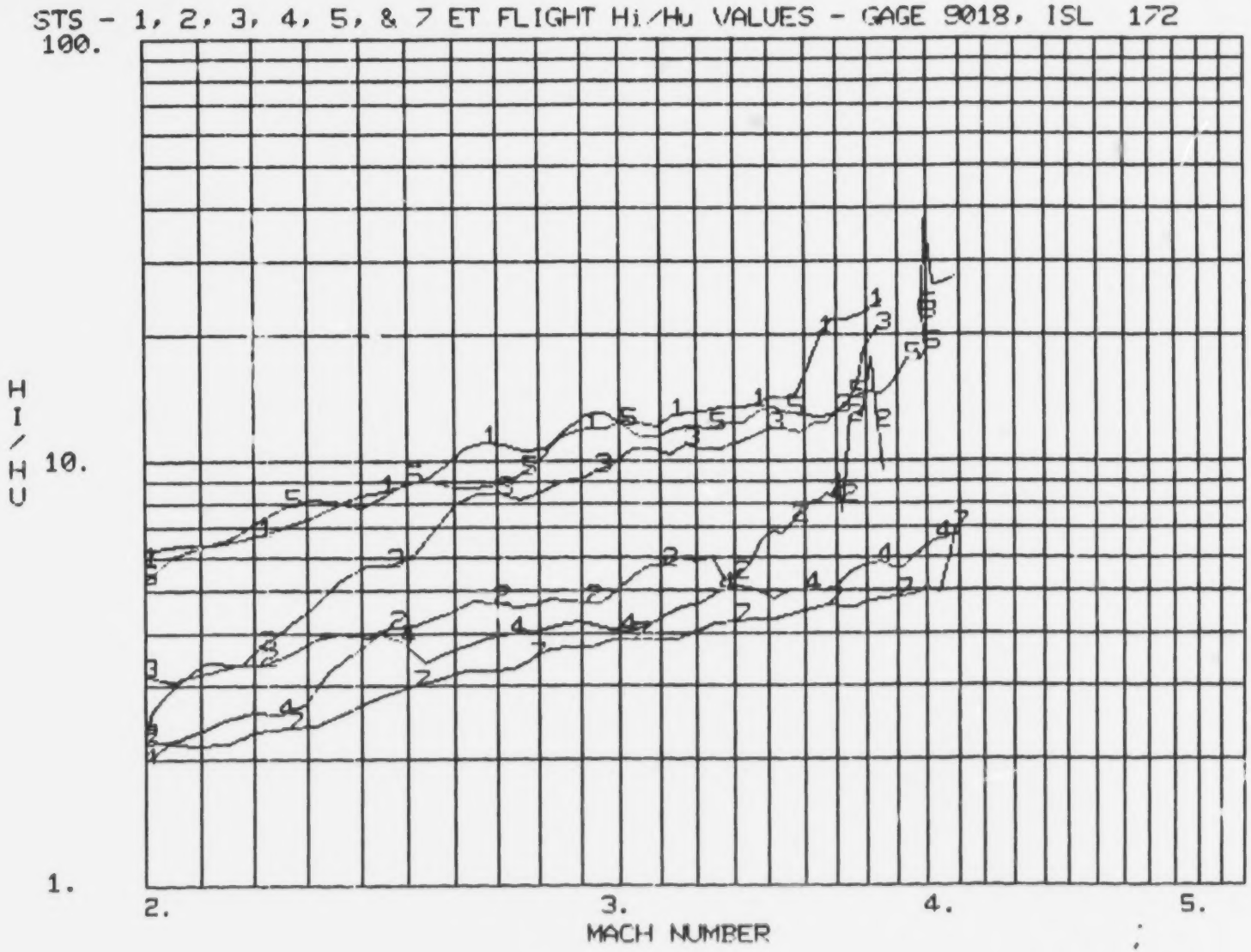

Fig. B.14 Flight-derived $\frac{h_i}{h_u}$ vs. M_∞ for Gage 9018

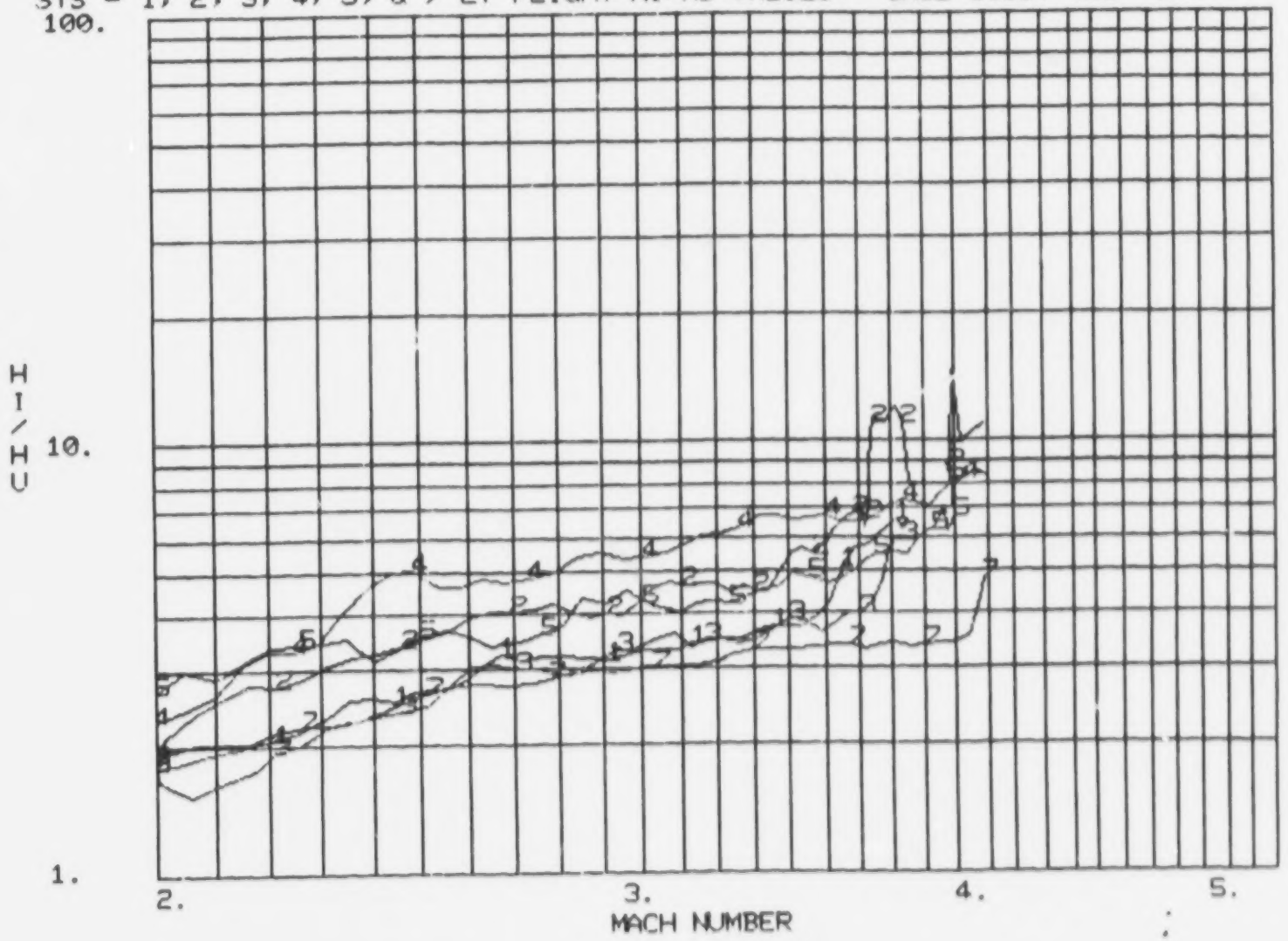

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Fig. B.15 Flight-derived $\frac{h_i}{h_u}$ vs. M_∞ for Gage 9019

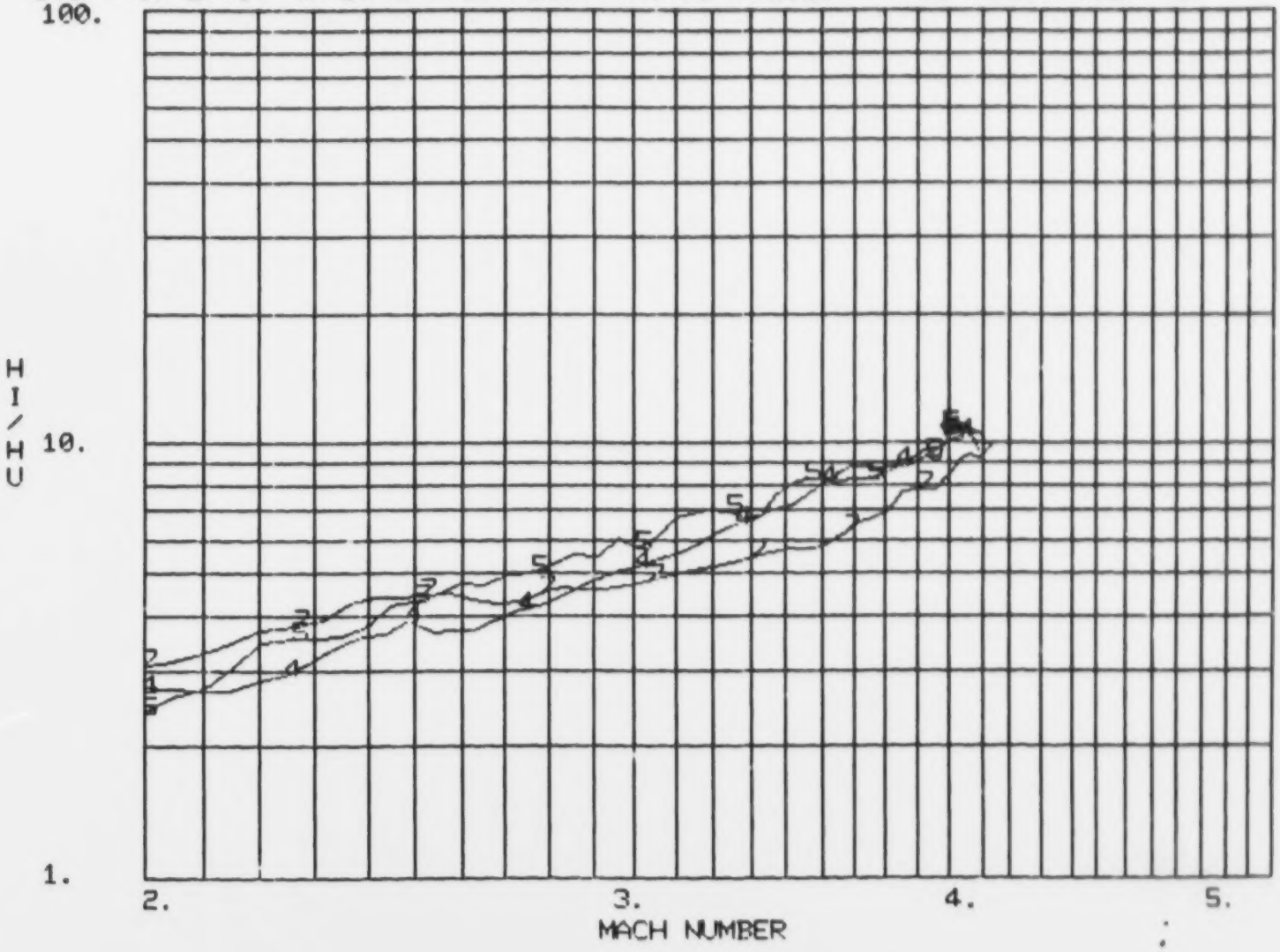

Fig. B.16 Flight-derived $\frac{h_i}{h_u}$ vs. M_∞ for Gage 9020

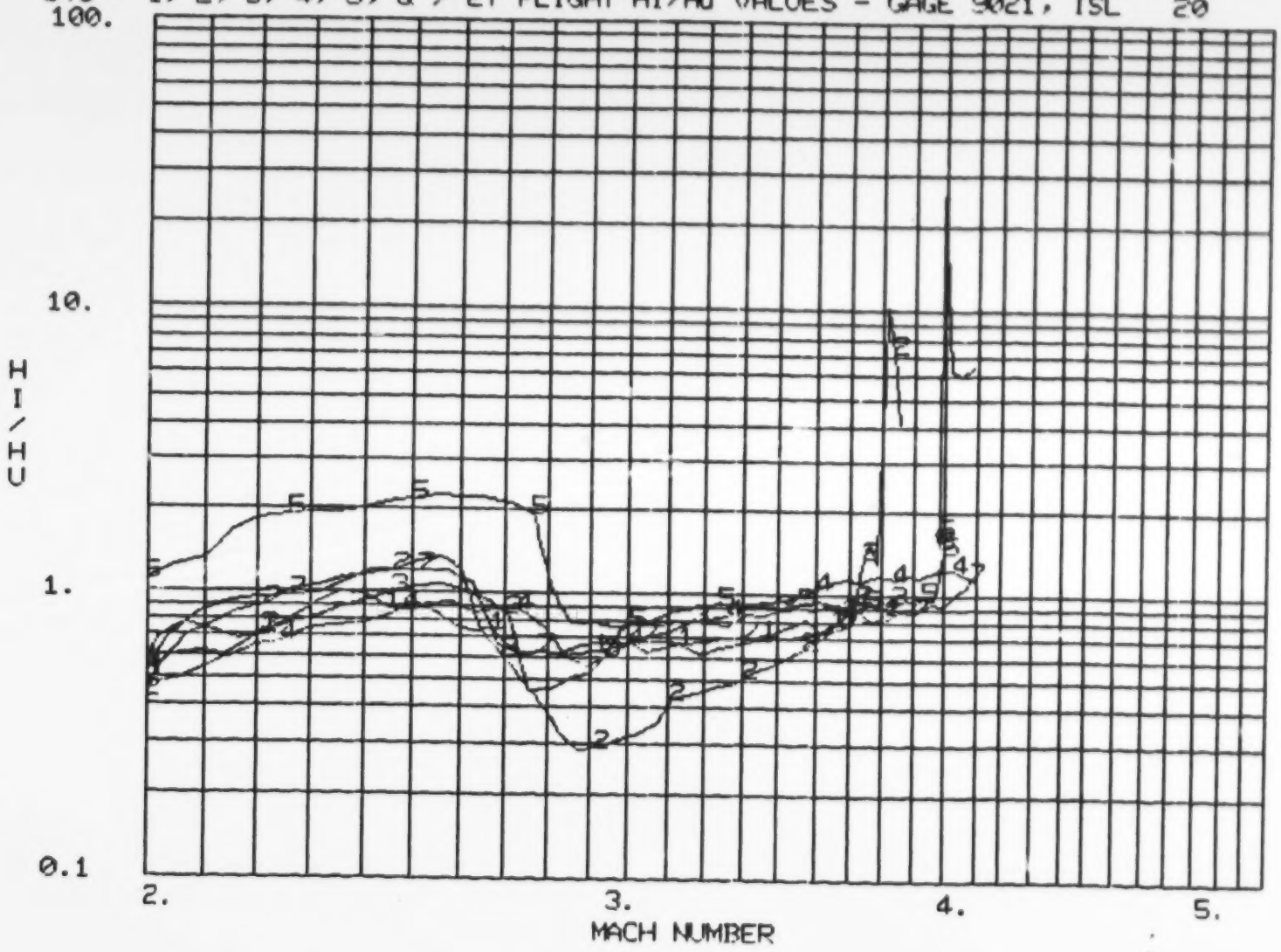

Fig. B.17 Flight-derived $\frac{h_i}{h_u}$ vs. M_∞ for Gage 9021

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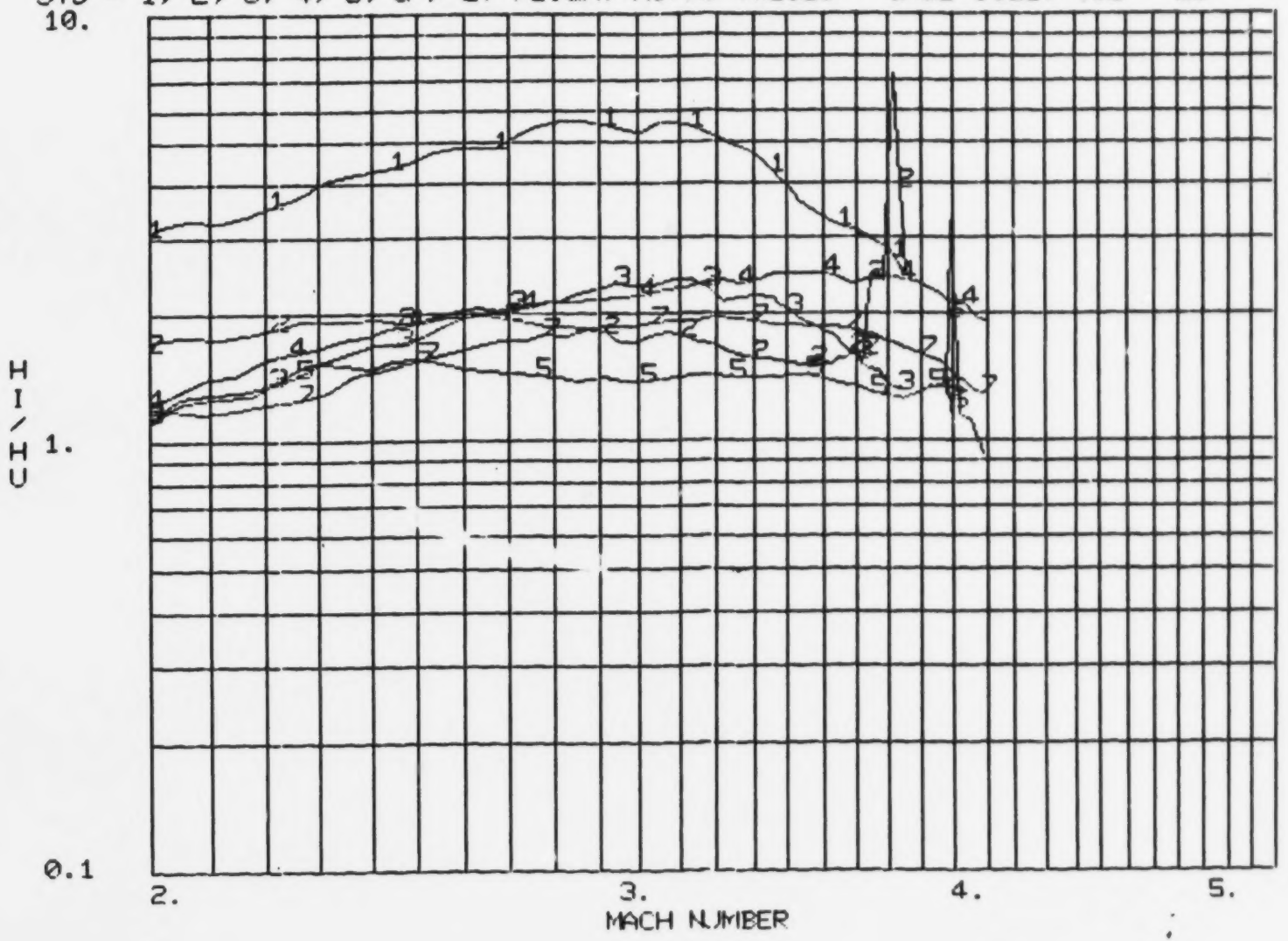

Fig. B.18 Flight-derived h_l/h_u vs. M_∞ for Gage 9022

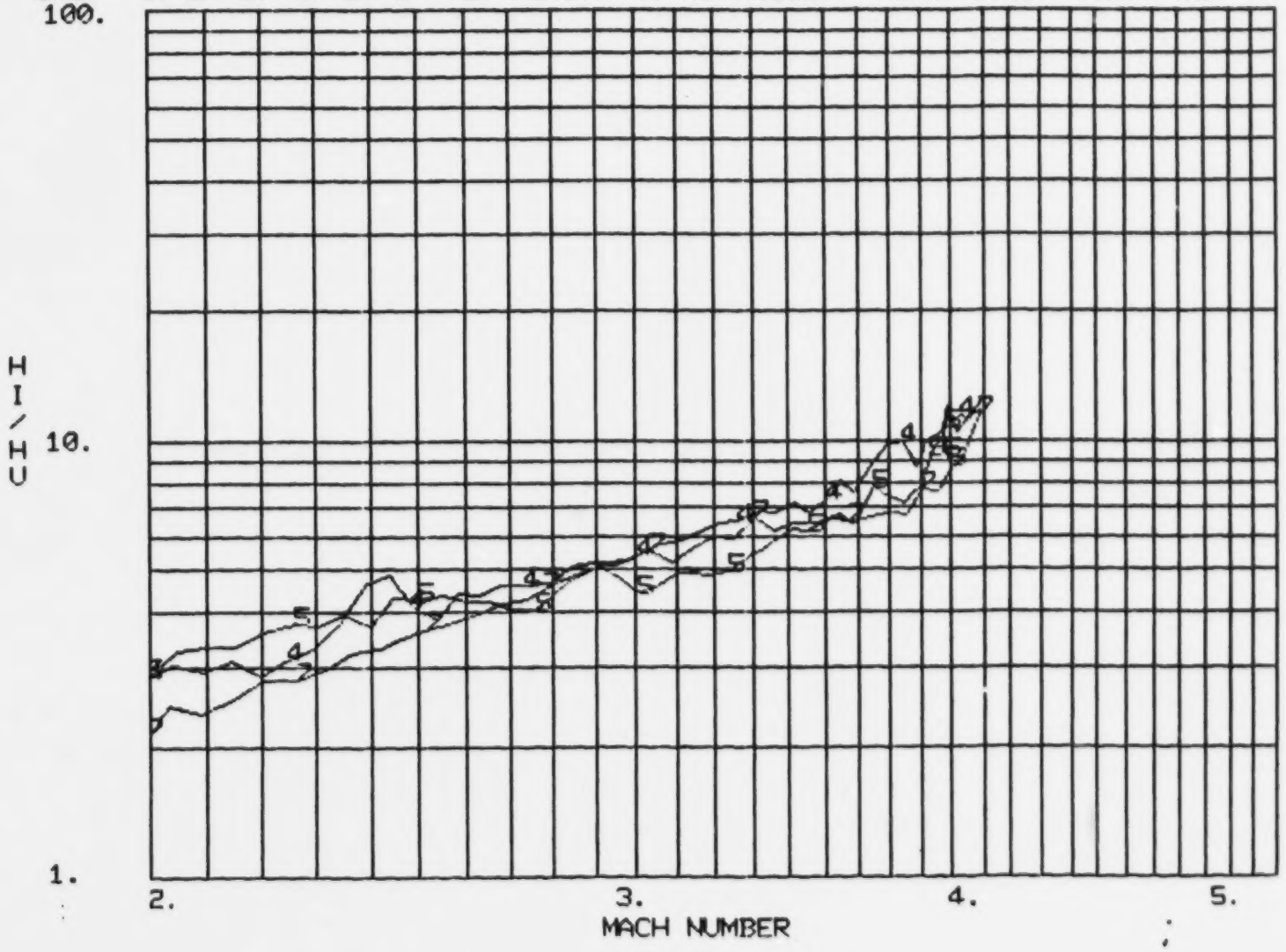

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Fig. B.19 Flight-derived h_i/h_u vs. M_∞ for Gage 9023

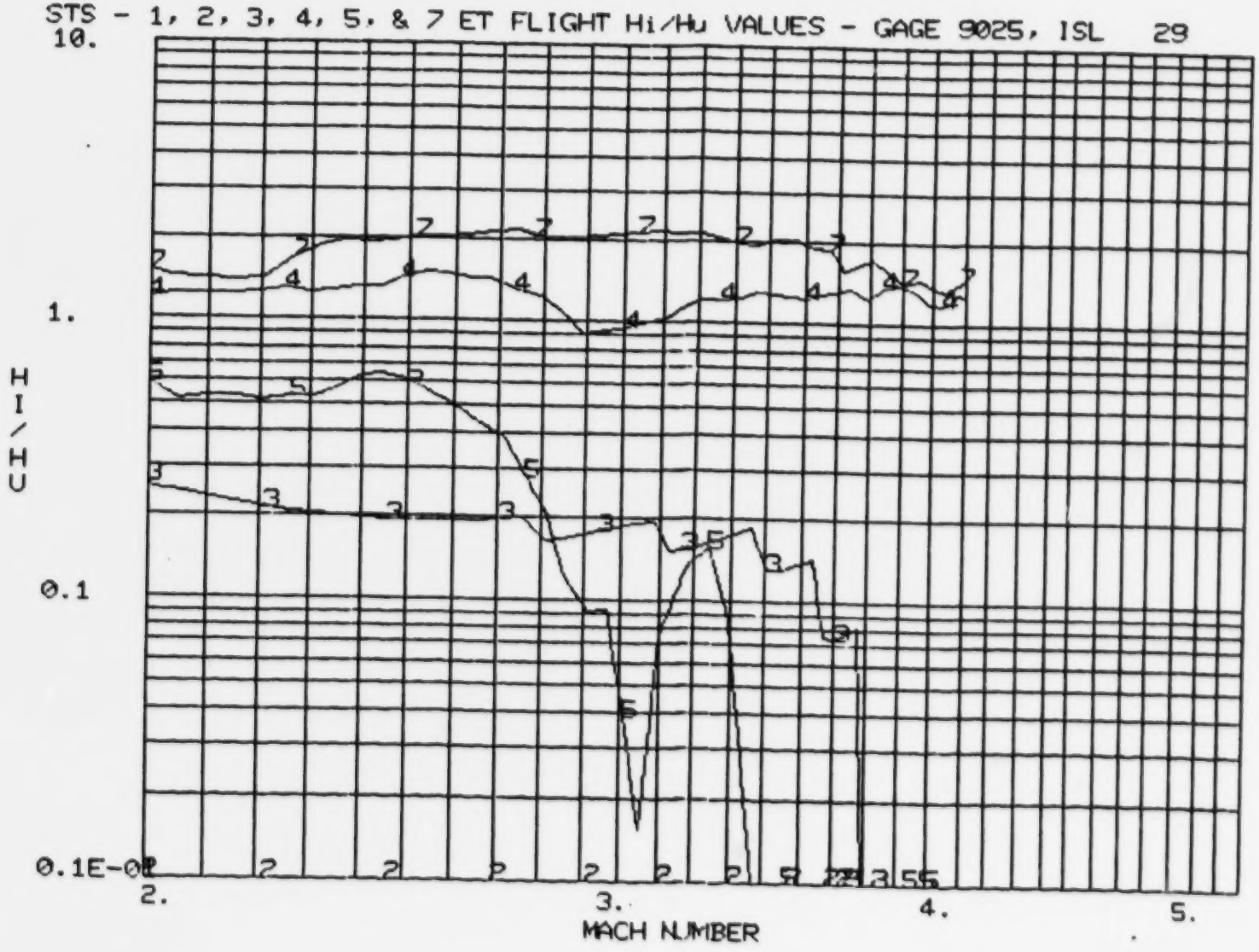

Fig. B.20 Flight-derived h_i/h_u vs. M_∞ for Gage 9025

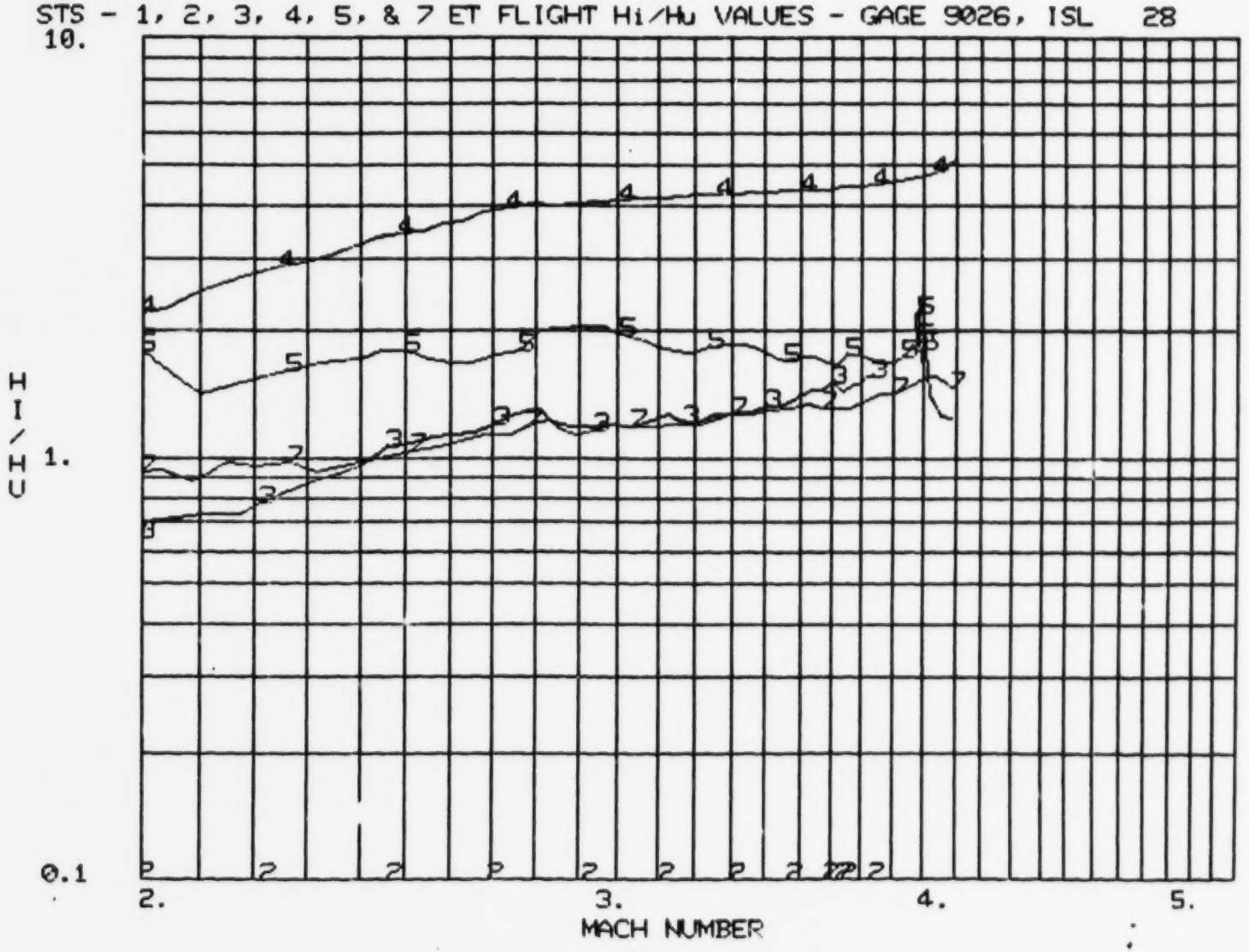

Fig. B.21 Flight-derived h_i/h_u vs. M_∞ for Gage 9026

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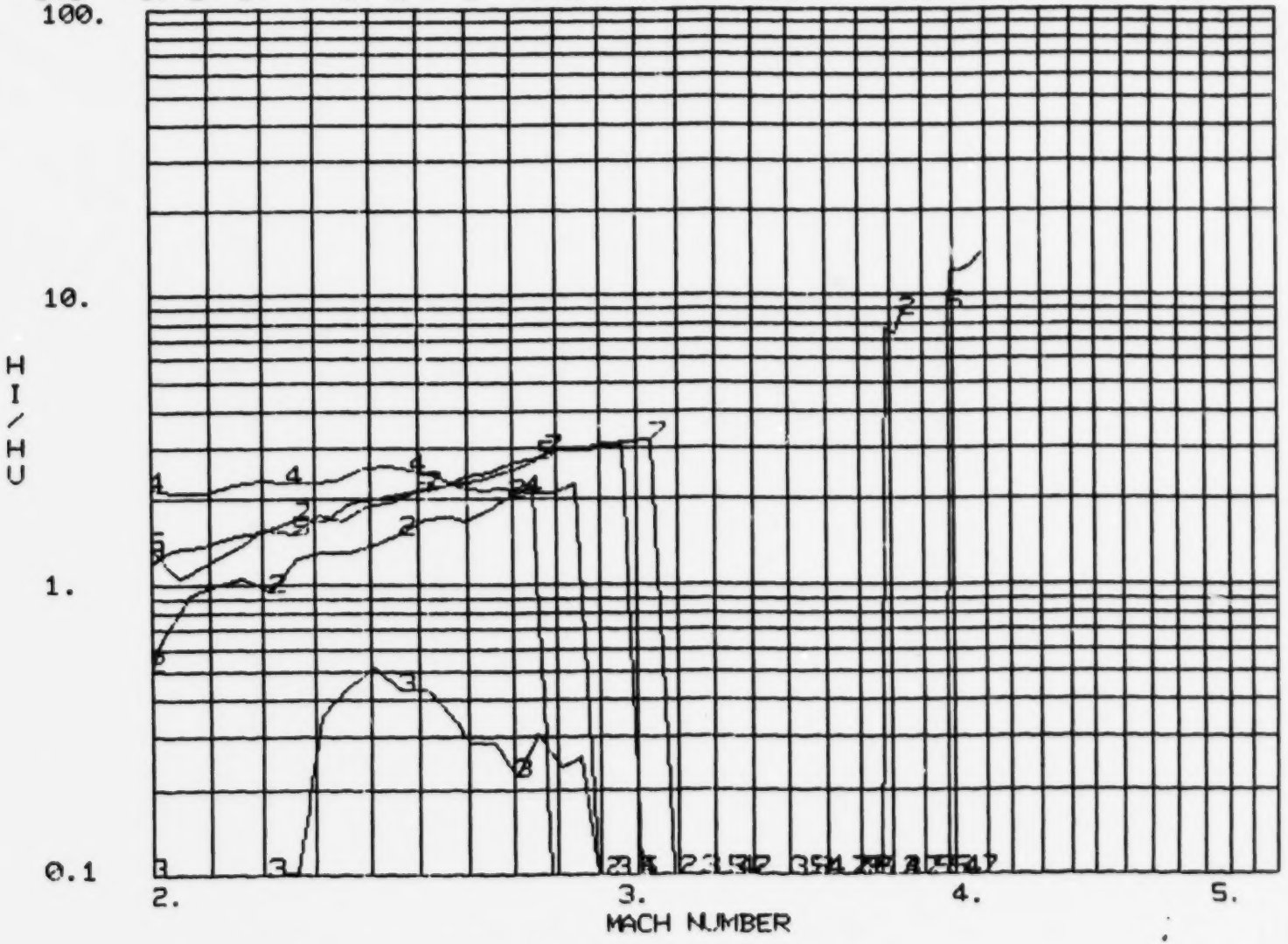

Fig. B.22 Flight-derived h_i/h_u vs. M_∞ for Gage 9027

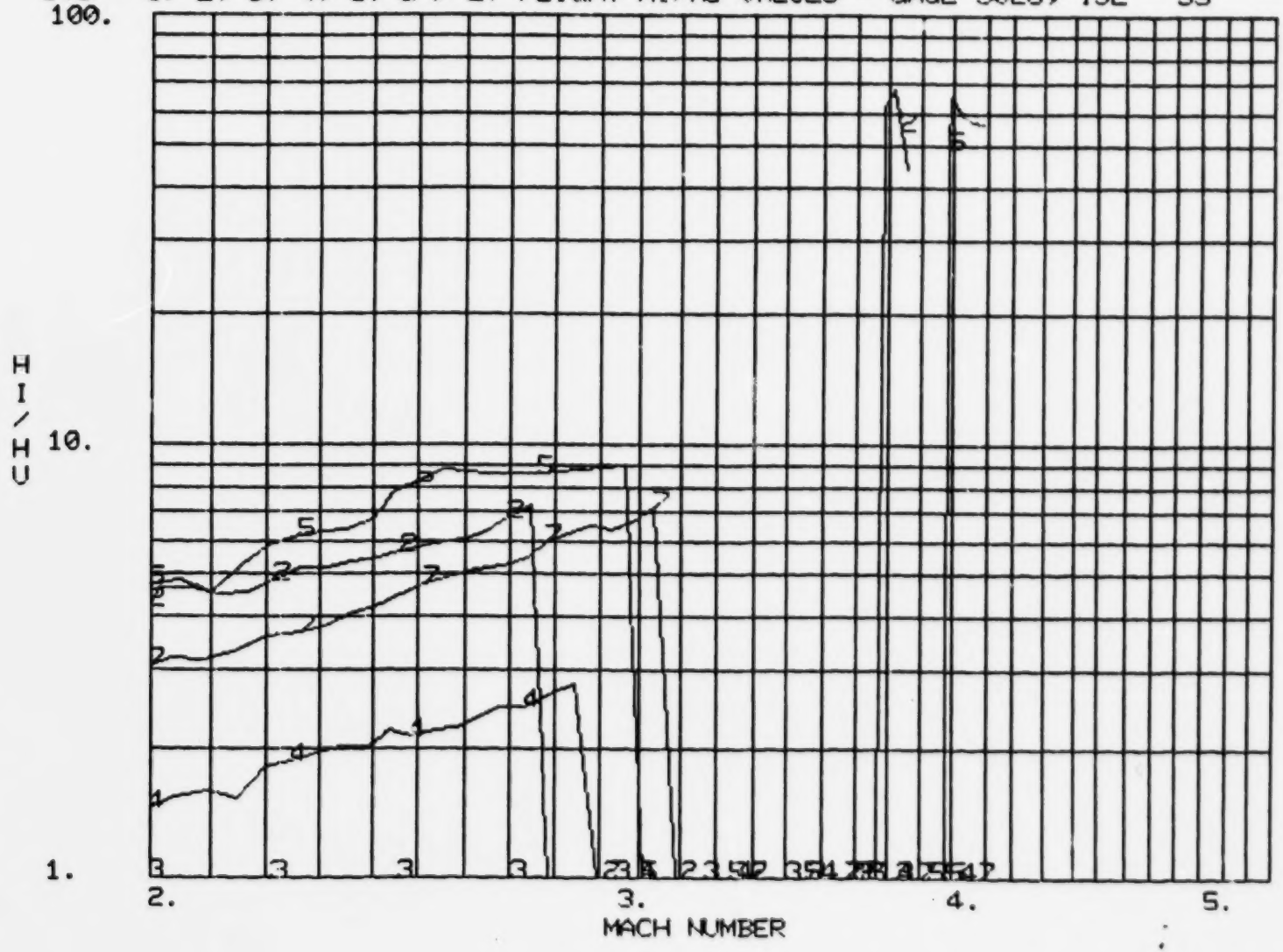

Fig. B.23 Flight-derived h_i/h_u vs. M_∞ for Gage 9028

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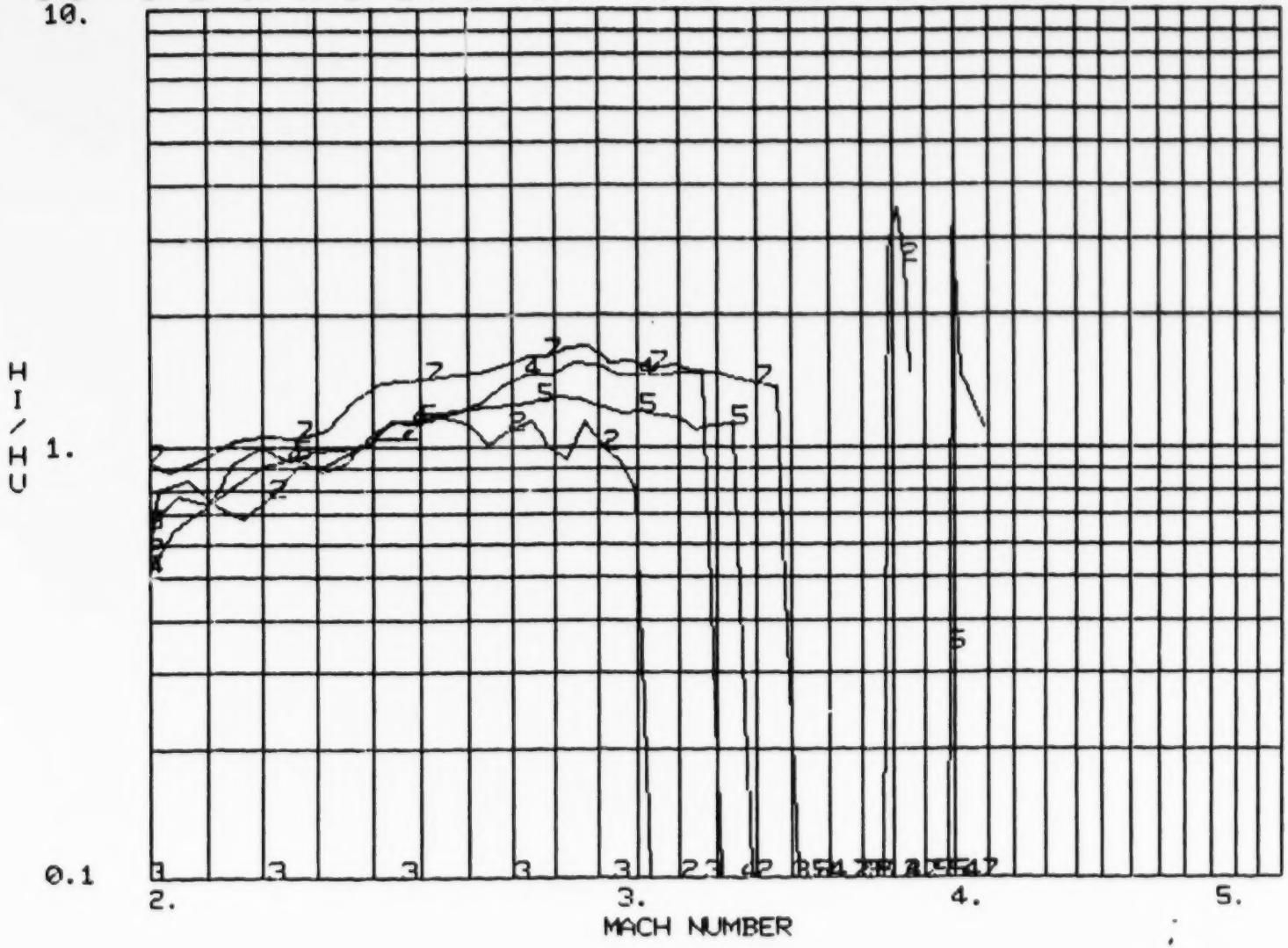

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Fig. B.24 Flight-derived h_i/h_u vs. M_∞ for Gage 9029

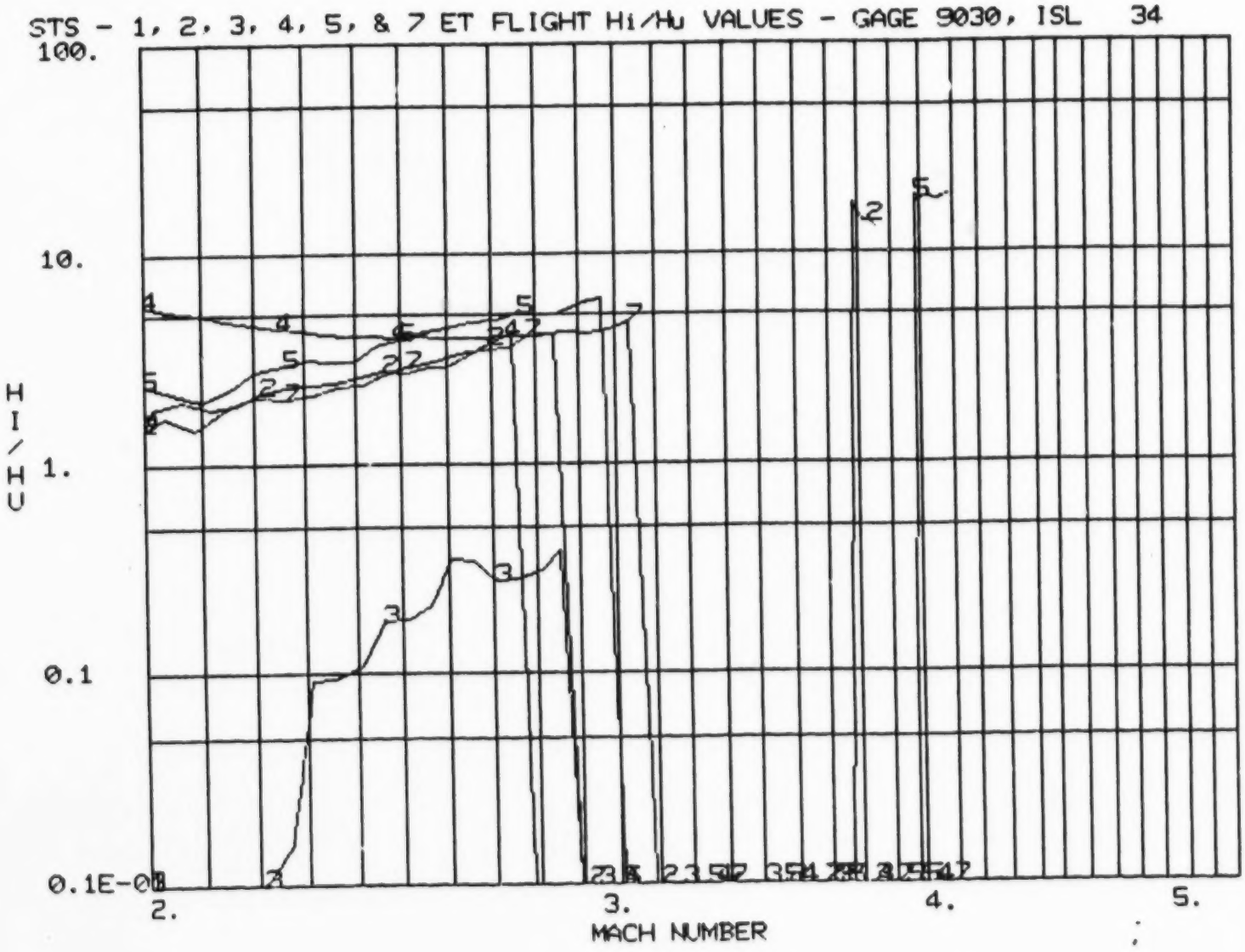

Fig. B.25 Flight-derived h_i/h_u vs. M_∞ for Gage 9030

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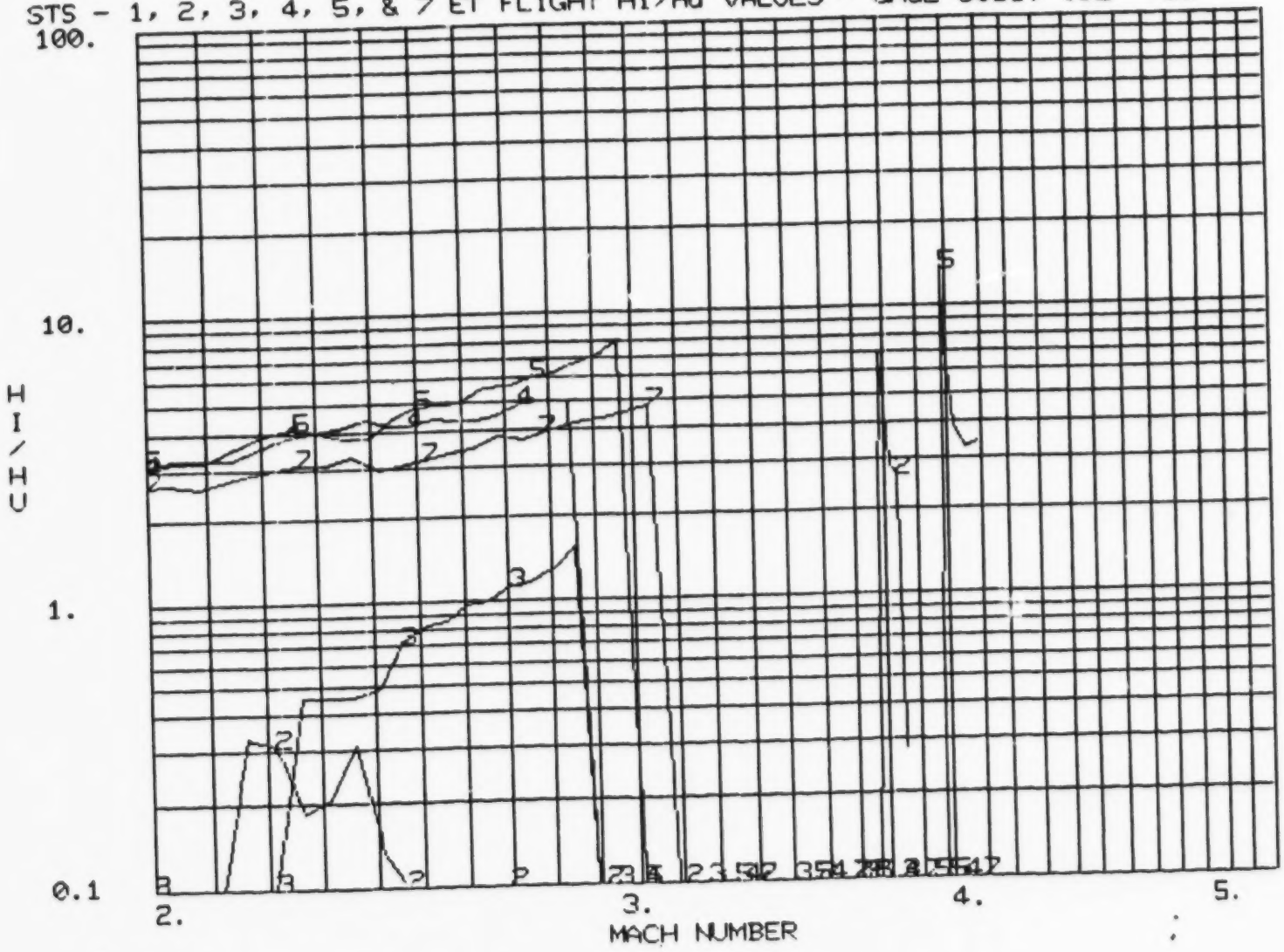

Fig. B.26 Flight-derived h_i/h_u vs. M_∞ for Gage 9031

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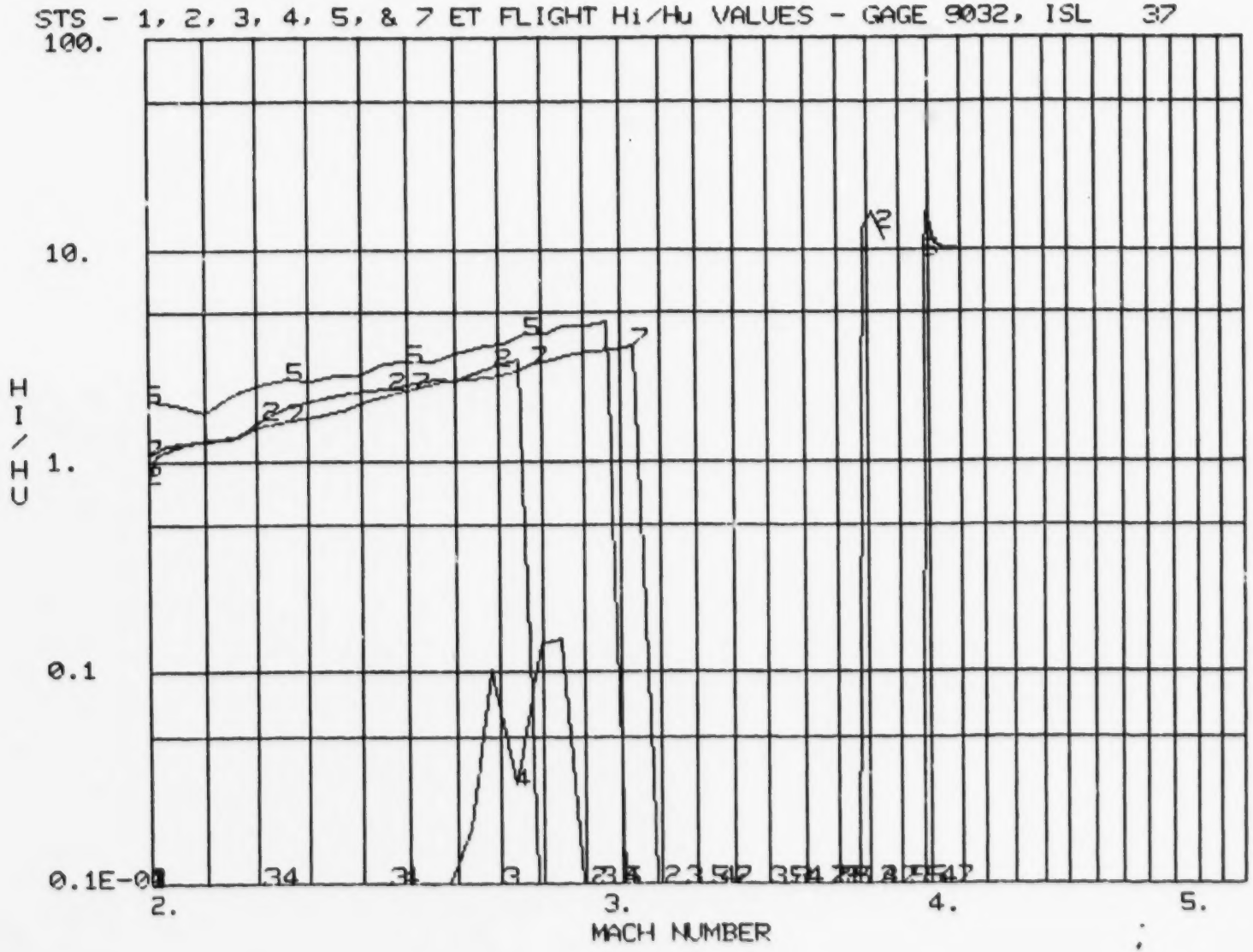

Fig.B.27 Flight-derived h_i/h_u vs. M_∞ for Gage 9032

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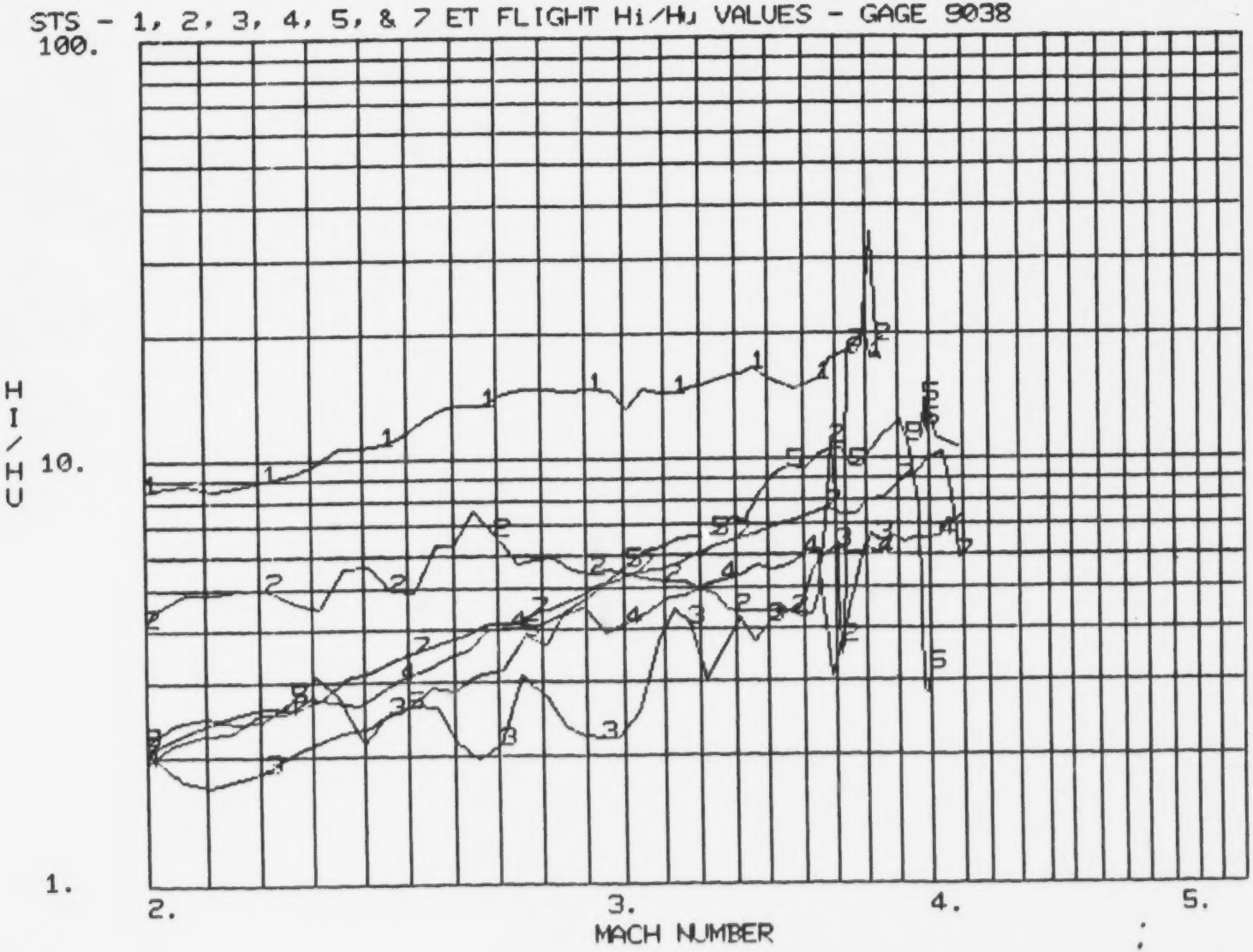

Fig. B.28 Flight-derived h_i/h_u vs. M_∞ for Gage 9038

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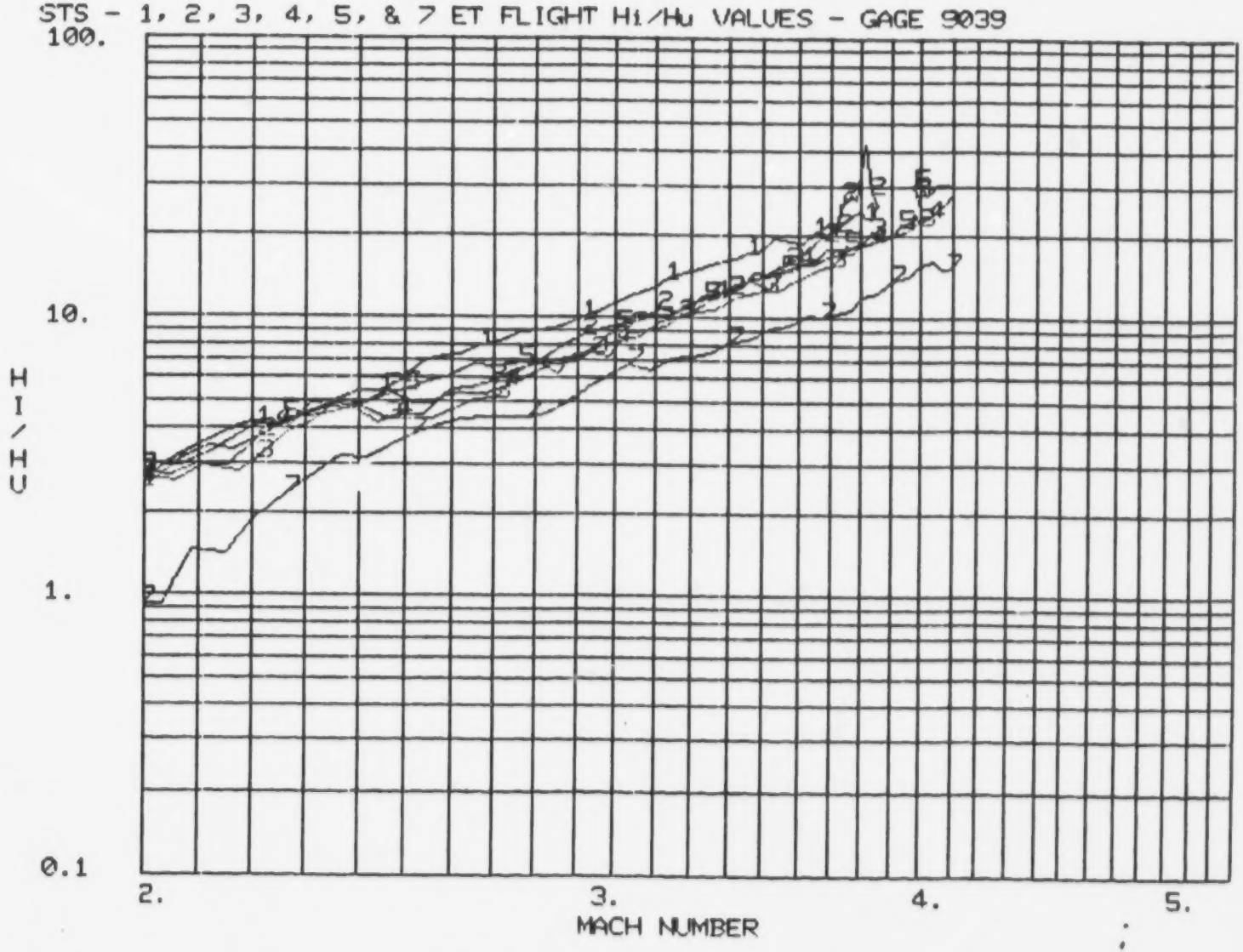

Fig. B.29 Flight-derived h_l/h_u vs. M_∞ for Gage 9039

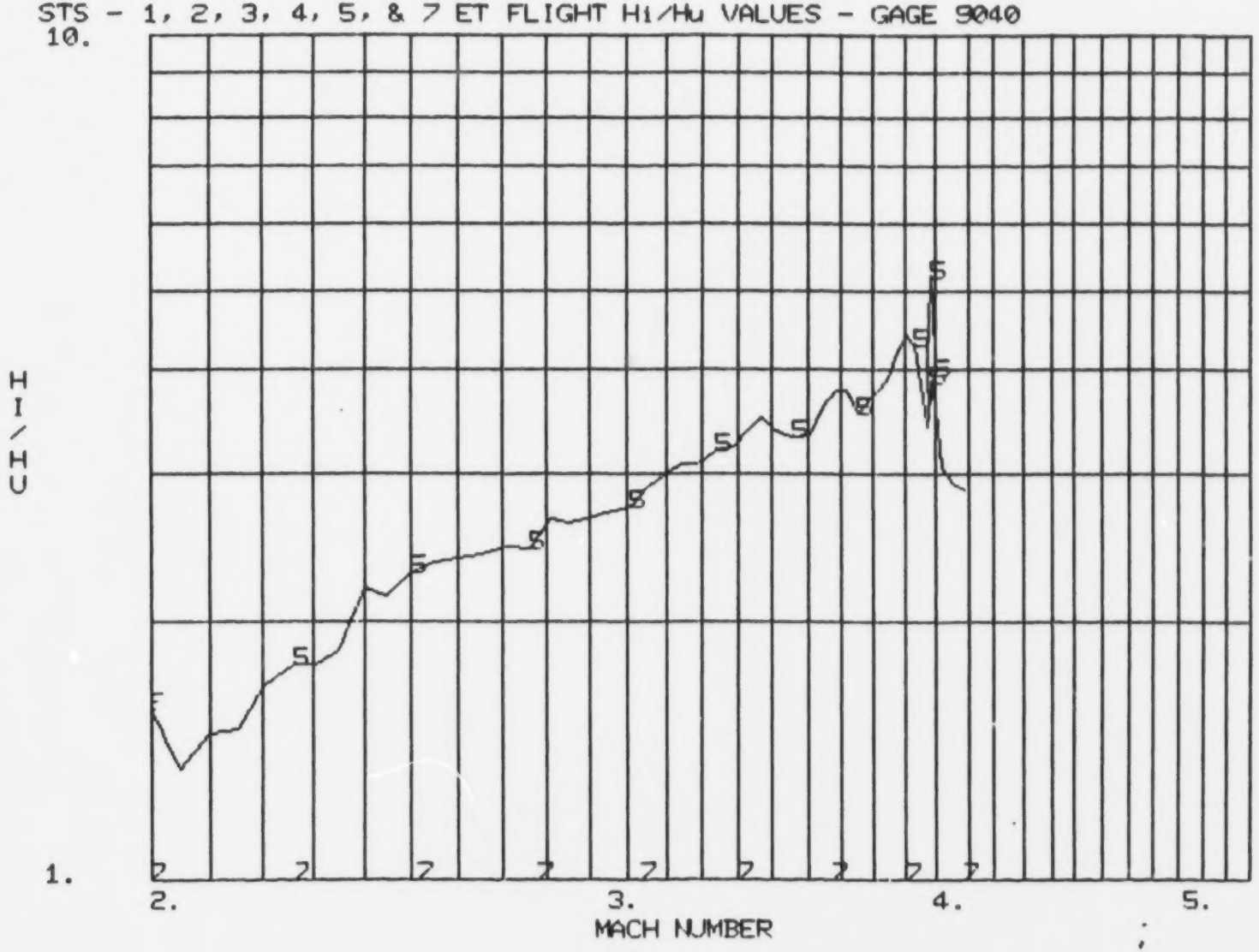

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Fig. B.30 Flight-derived h_i/h_u vs. M_∞ for Gage 9040

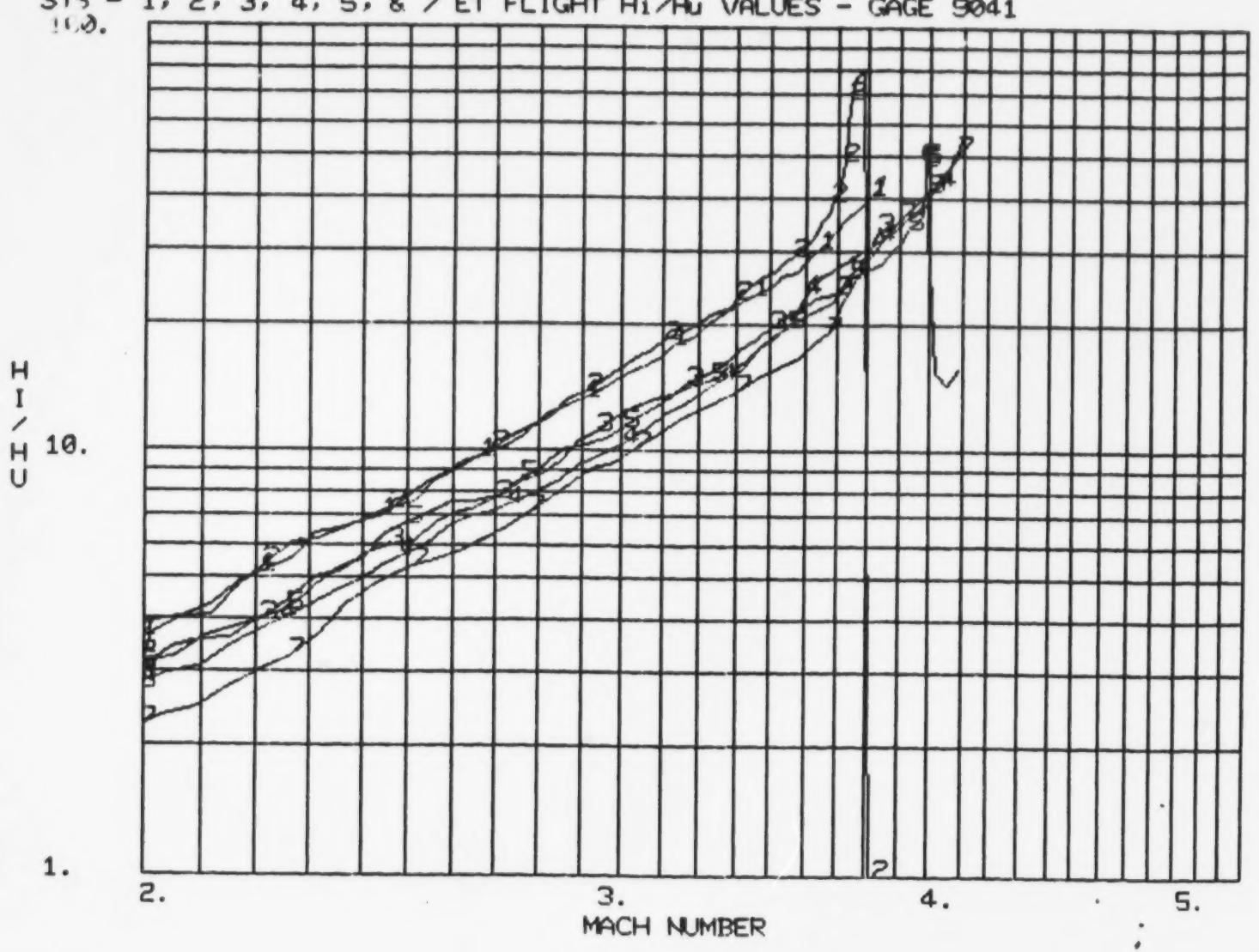

Fig. B.31 Flight-derived h_i/h_u vs. M_∞ for Gage 9041

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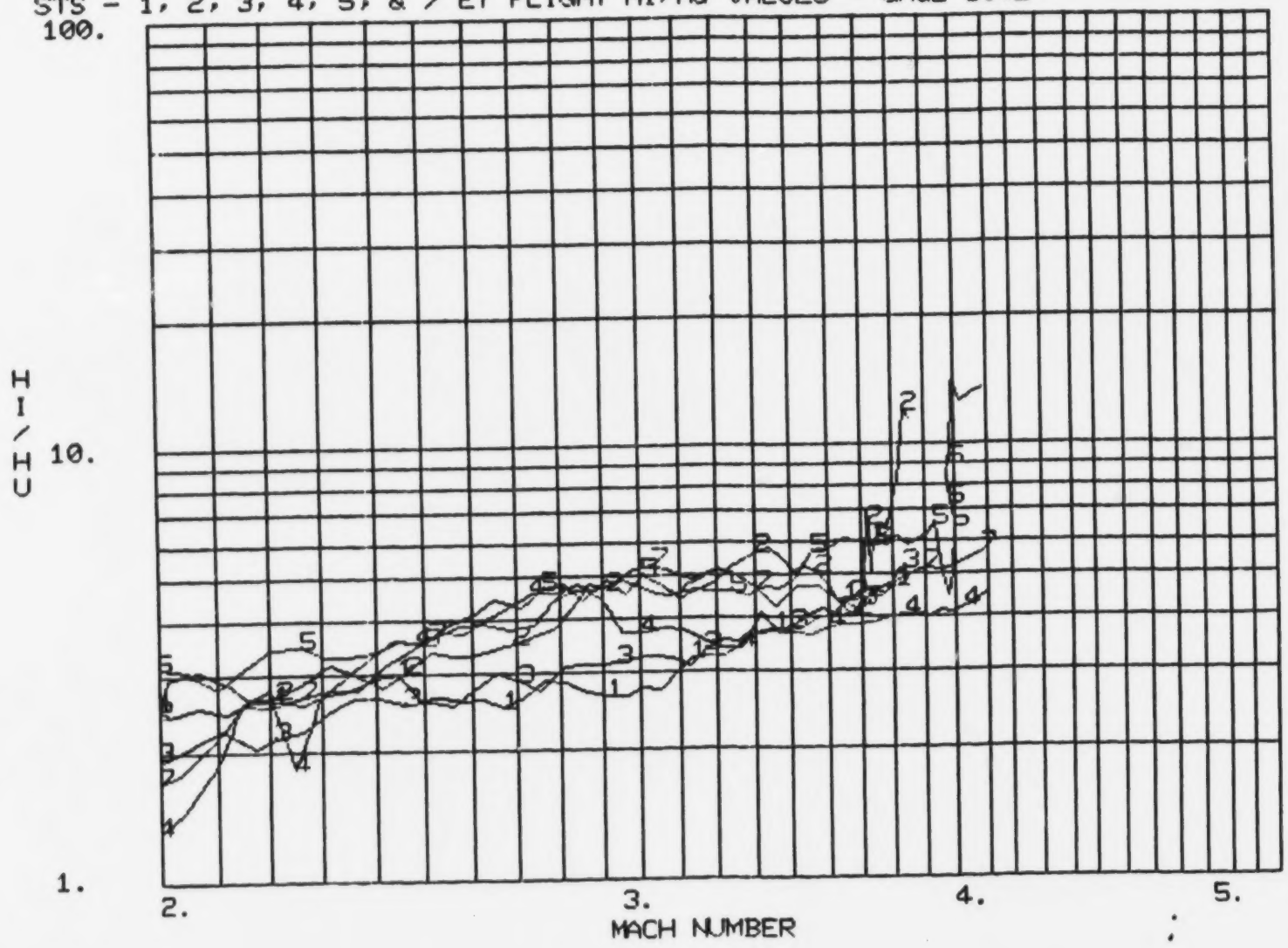

Fig. B.32 Flight-derived h_i/h_u vs. M_∞ for Gage 9042

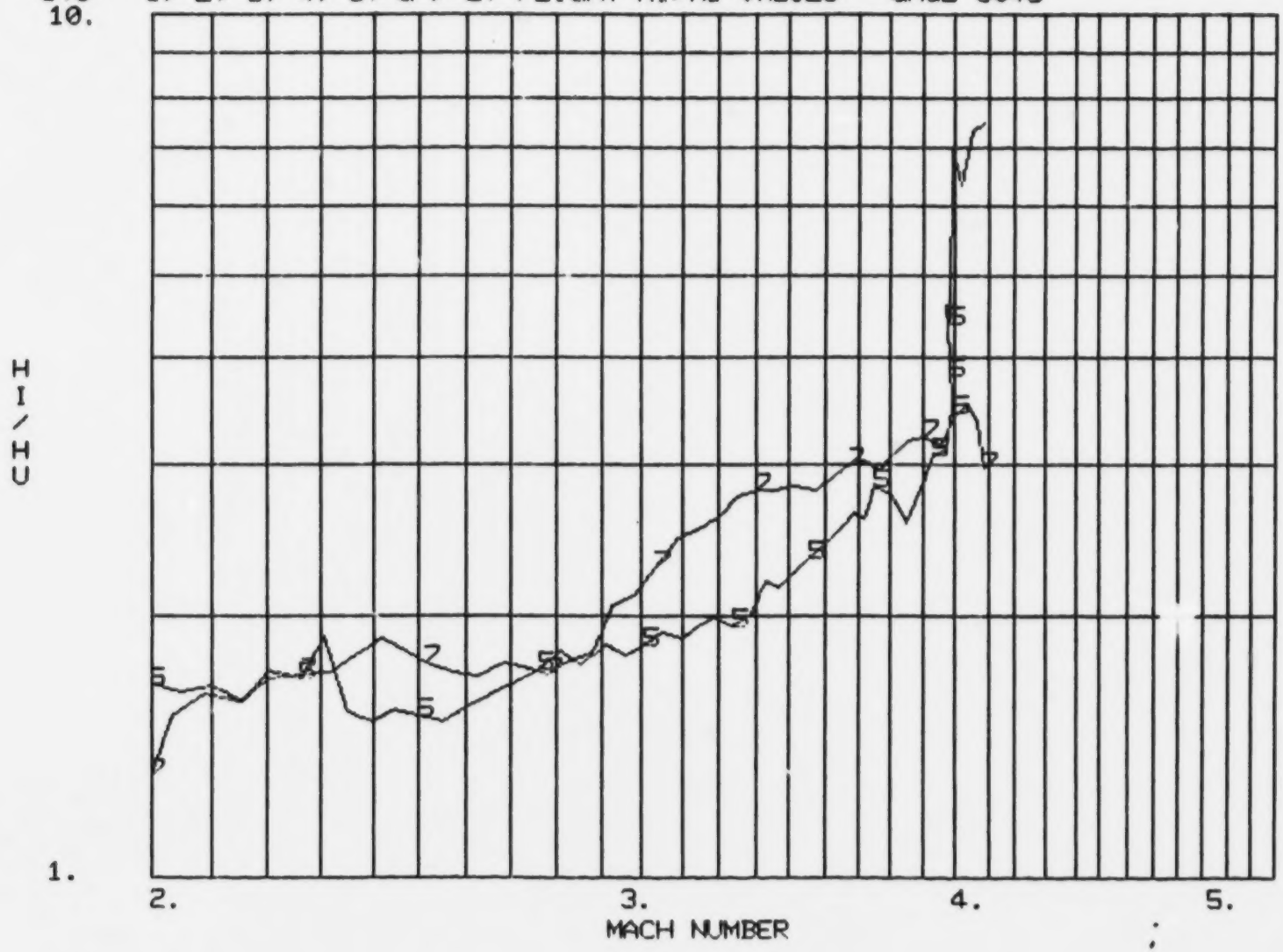

Fig. B.33 Flight-derived h_i/h_u vs. M_∞ for Gage 9043

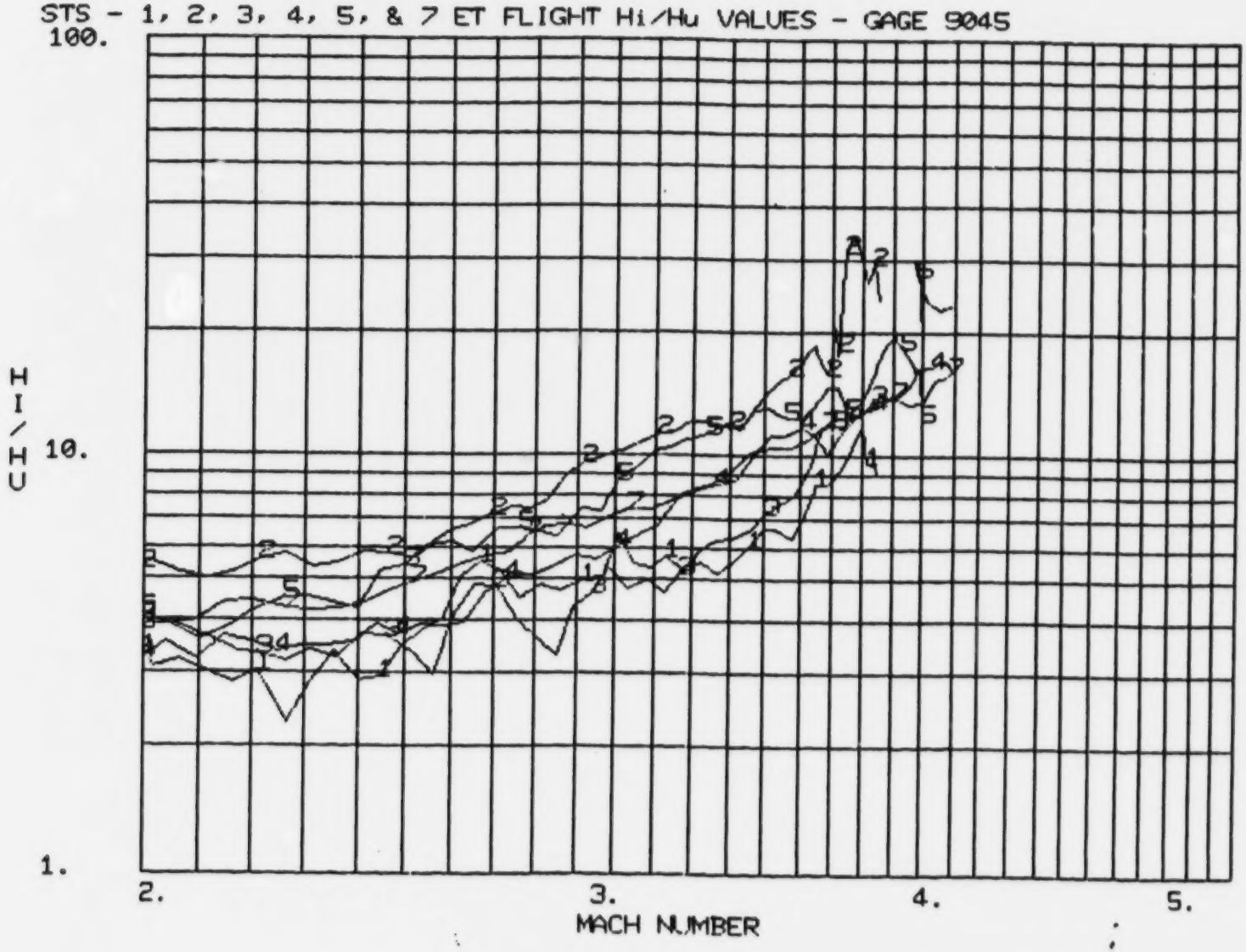

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Fig. B.34 Flight-derived h_i/h_u vs. M_∞ for Gage 9045

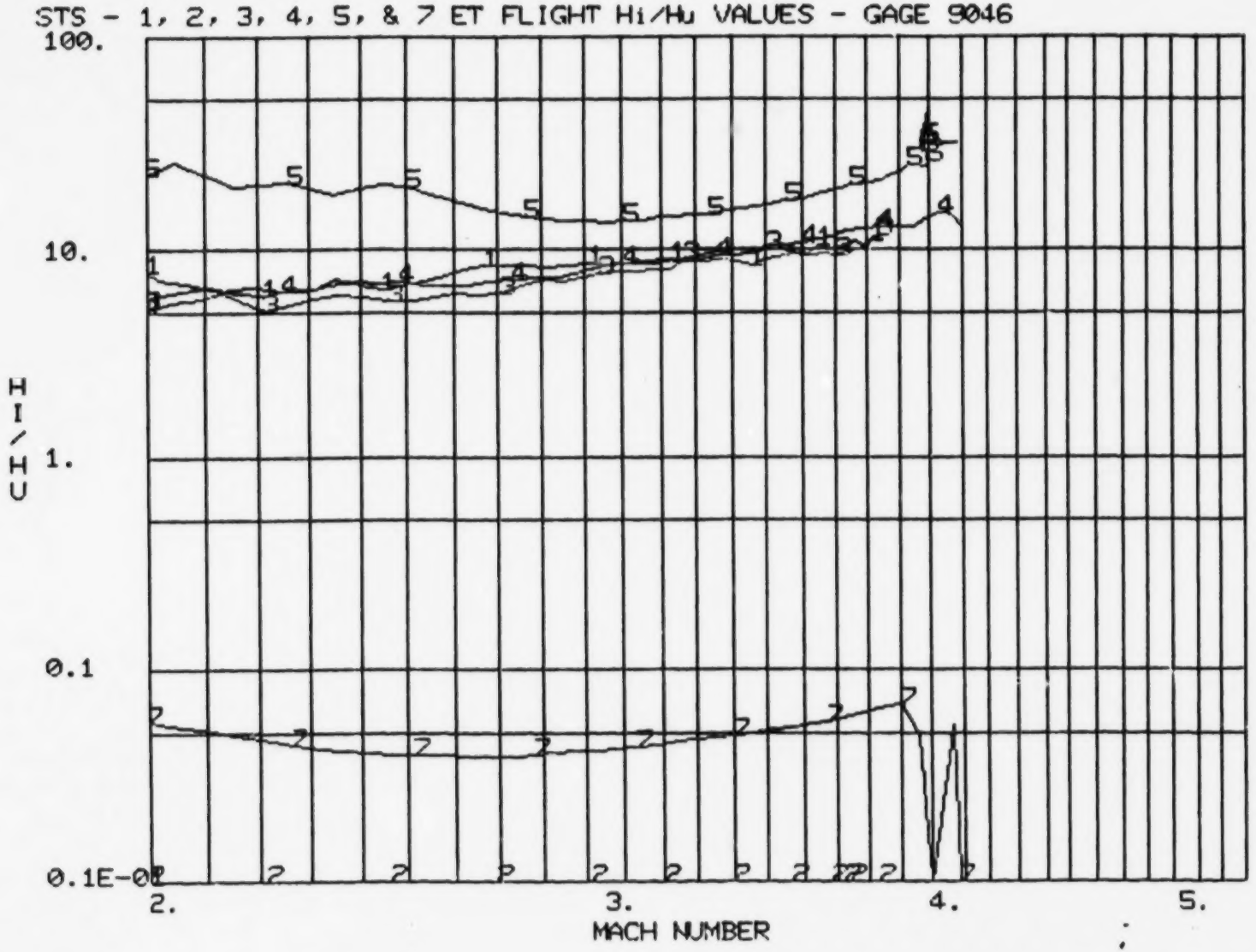

Fig. B.35 Flight-derived h_i/h_u vs. M_∞ for Gage 9046

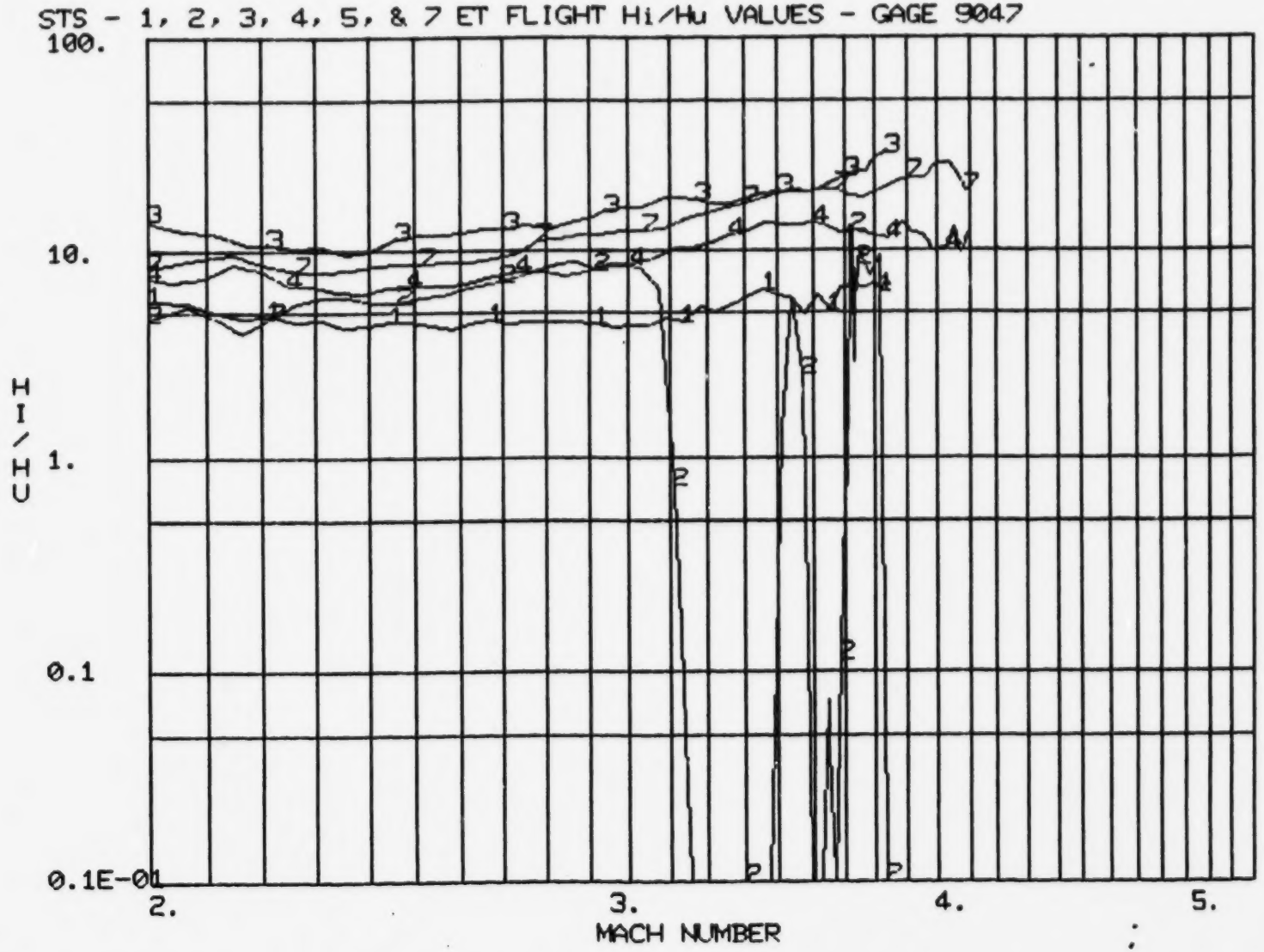

Fig. B.36 Flight-derived h_i/h_u vs. M_∞ for Gage 9047

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